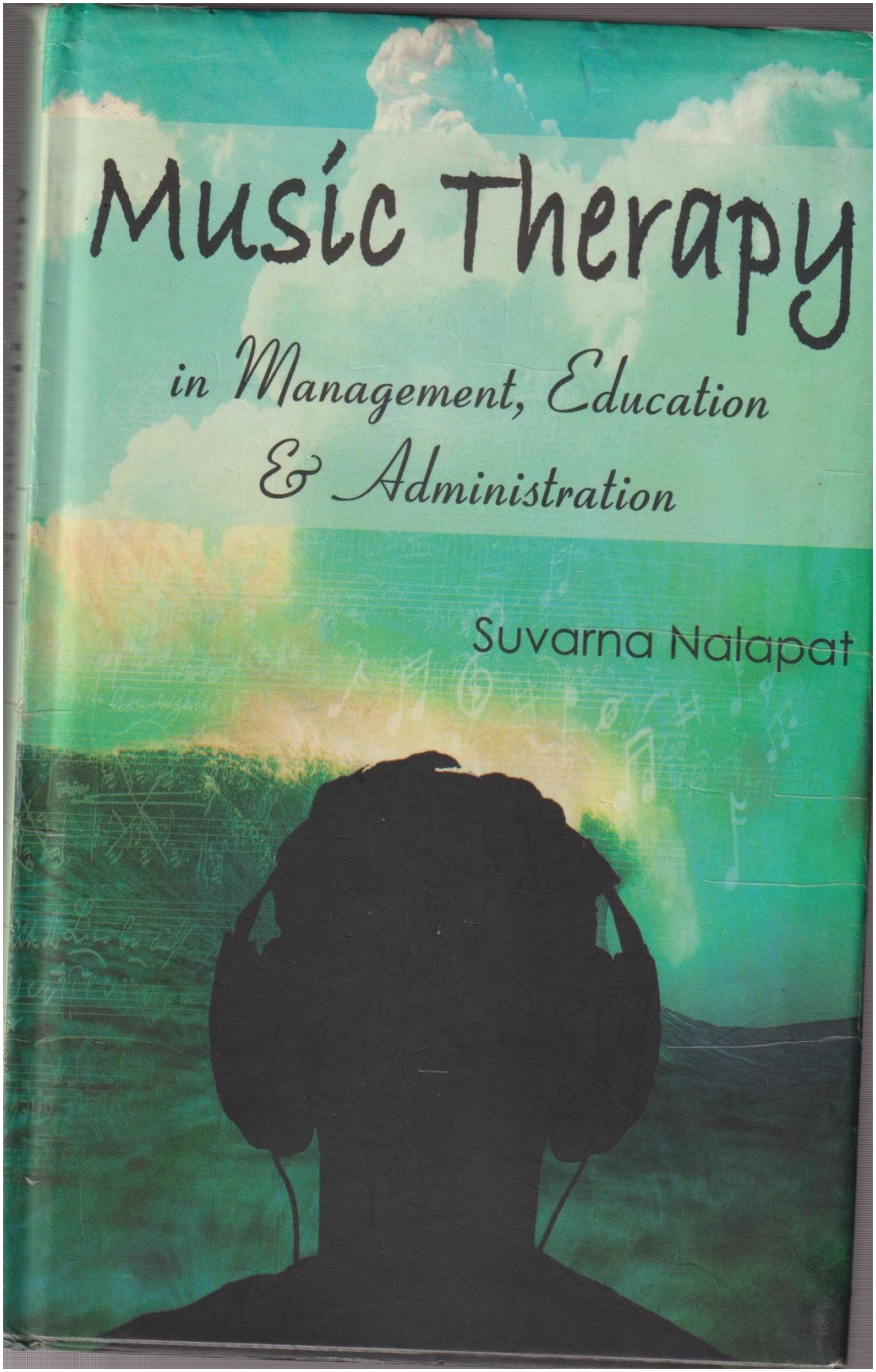
Music Therapy
in Management, Education
& Administration
Suvarna Nalapat

Music Therapy in Management, Education & Administration

This book deals with the application of music therapy in management, education and administration. Explaining how the Raga is used to remove ragadvesha (dualities), it deals with the multiple intelligence theory of Howard Gardner to develop the music therapy scheme.

It also presents a detailed account of medical ethics, how to organize a research process, the concept of a medical university, curriculum for music therapy, curriculum for short-term courses, role of emotions in music therapy, and the problem of consciousness. Case studies of dementia and alzheimer's disease find place in the discussion as well.

Dr. Suvarna Nalapat, an MD in pathology, has a vast experience of 32 years of teaching undergraduate and postgraduate classes. She was Professor and Head of Department of Pathology at Amrita Institute of Medical Sciences and Research Centre, Kochi; Consultant Histopathologist at Endocrinology and Immunology Laboratory, Kochi; and Associate Professor of Pathology at Kerala Government Medical College, Calicut.

Besides a large number of research papers published in national and international journals of repute, Dr. Nalapat has to her credit many acclaimed books including Amrita Jyoti: Comparative Study of Religions, A Rediscovery of India through the panchasidhantika of Varahamihira, Mudra: A Literary Criticism of Ujjainy. Also, she has participated in many a seminars and conferences and delivered lectures on Music therapy.

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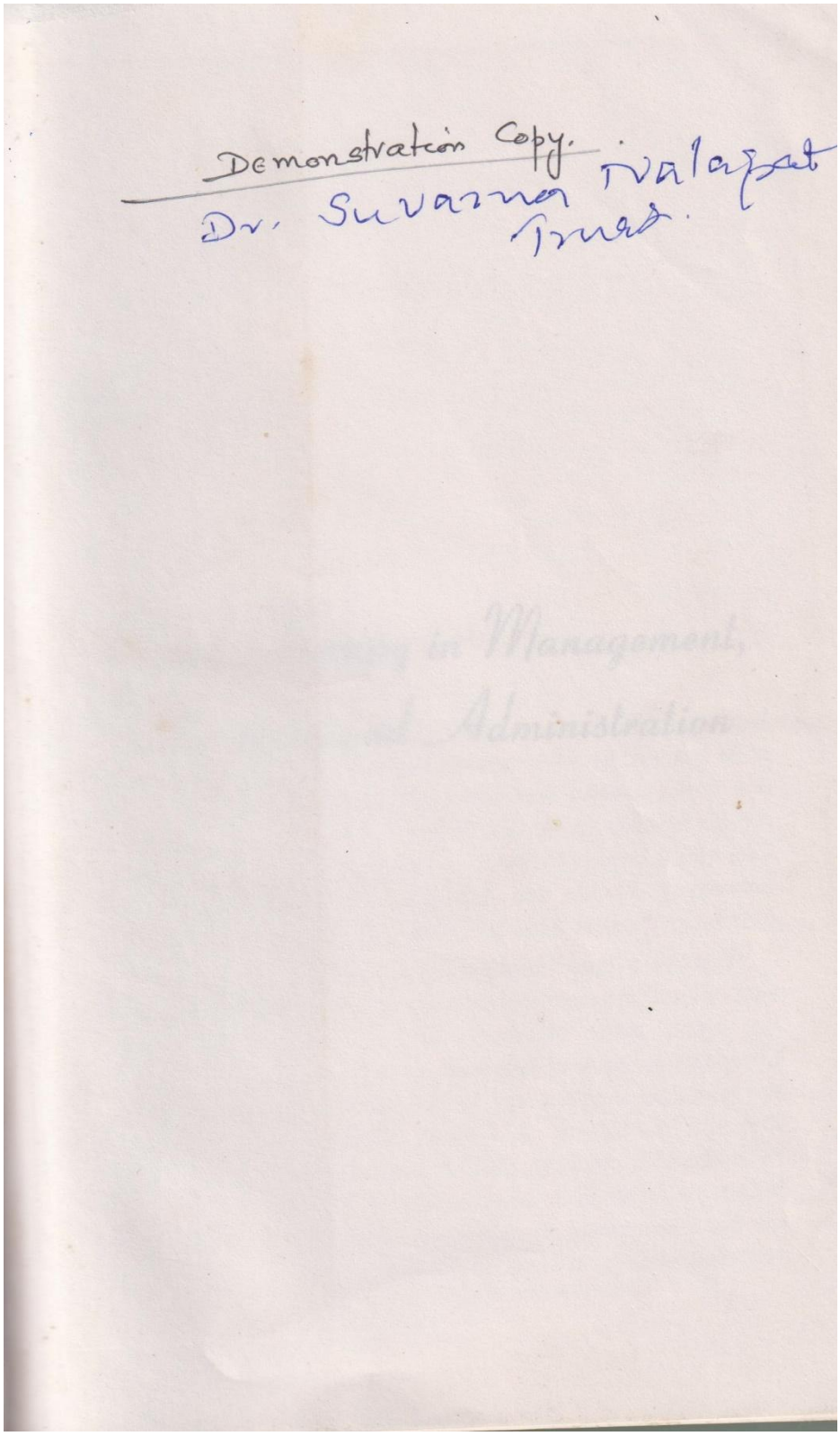
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Music Therapy in Management, Education and Administration

About the author

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I acknowledge

1. All my students, colleagues and children who have given me an insight into how it affects them to hear a lullaby sung, or a discussion on music makes them feel.

2. Dr. Udayabhanu who loved music and through music became my life partner and put up with many of my eccentricities regarding music.

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10. To all my clients and acquaintances who have given me love and insight into human nature, needs and the essential divine nature of human soul.

It would be appropriate here to remember all the volunteers, the patients, the mentally compromised children and elderly whom I saw. But, I have to remember a girl, a young mother with multiple secondaries of spine with breast cancer, who wanted to talk to Yesudas before her death. After hearing his *Nithichala sukhamā--kalyāṇi rāga*—which I played for her, and sat beside her holding her hands so that she could sleep calmly, with a secure feel. The former wish, I could not fulfil, but the latter I could. The project and the book is dedicated to all of humanity, in her memory.

Guru +*Vāyu* (*Prāṇa*) is everything in music, for music. When I mention *Guruvāyūrappan* as the last he is always the first and the middle too. Everywhere, and in everything, *Guru* and *Vāyu* dwell to give us life and dreams and wisdom.

Ever in the lotus feet of Lord Viṣṇu, *Guruvāyūrappan.*

Dr Suvarna Nalapat
17 August 2007

Preface

Wherever I go for lectures/demonstrations or speeches, people ask me either of these two questions.

1. How a doctor/a pathologist can speak on these subjects?
2. How do you find time for all these things, domestic and professional activities, writing books on very serious subjects and social work?

I have been answering these questions for a long time. When I write this book, the first thing that comes to my mind is "I sing, therefore, I am," a slight modification of "I think, therefore, I am"of Descartes. The very first talent a child develops is singing, cooing with tunes heard, may be that of a koil, or a lullaby which is *rāga*less, rhythmless, but rich in the *bhāva* of love, compassion, creating a feeling of security, a feeling that I belong. I was a child, born and brought up in an atmosphere of literature, philosophy, poetry, film song, and socio-political activity. I became a doctor only at the age of 25. Till then, I was doing exactly what my predecessors/ancestors did. My first language is not that of a doctor/pathologist in the conventional sense but, in an unconventional way, even these activities belong to the realm of pathology. 'Pathos' and 'logos' for me are not merely diseases and its knowledge. The derivation of the word 'Pathos', and its actual meaning is not disease, but a rich expression or b*hāva* of compassion evoked by a sad event or suffering, and 'Logos' is *vidya*, both *apara* and *para* (knowledge and wisdom). And, in that sense, I am a pathologist when I do a compassionate thing, when I experience the *bhāva* of compassion with a piece of art, or with a human being and try to learn the being and becoming by experience (own and others). That is my answer to the first question.

blooms on a plant when the right time or season comes! I did not have the classical background of Indian music, but I had a pristine love for the simple soft music of our land and my curiosity led me to the deep realms of classical music, astronomical, mathematical, Vedic and Upanishadic traditions to find out the similarities or parallels in them and that led to this interdisciplinary approach. Being a doctor, and interested in quantum theories, it was not difficult for me to link the western and eastern ideas. But what is the use if I cannot give it to society? Unless the society is benefited, what is the use of an individual's knowledge? Thus, evolved in a hospital scheme for music therapy using Indian music, which is spiritual, and a university programme with recommendations for a curriculum.

We cannot prescribe a music/*rāga* like a medicine/drug. Music therapy is all about interrelationships, communication and narrative medicine involving compassion and love. I hope, the message of this book as that of love and compassion will reach out to everyone of my readers and through them to entire nation and the world.

To become an educationist and to plan a way of life for the coming generations is no easy task for people who never have thought about the problems of the society and of education and its goals. For this activity, one may have to learn many arts and sciences, should have a loving mind, a sharp and extraordinarily receptive intellect, and love for nature and nurture. And one should have lived a model life for the students to emulate. In ancient India, every *gurukula* had a *guru* and a *gurupatni*, and the *guru* led an exemplary scholarly and personal life so that the students learnt even the way of a good householder. Education, which I envisage for the 21st century teachers and students, is not for a *sanyāsi* but for a normal human being living a householder's life fulfilling all duties of the householder and achieving excellence in learning and in domestic/professional duties; a good citizen of the world and pride of the nation, useful to society, nation and world, and above all, to themselves, to their family and to the institutions they work for.

Bhārata is the cradle of civilizations and in this ancient land of *ṛṣi*s and sages, *Guru* is equivalent to God. *Guru* and *śiṣya* make a meaningful whole in generating *vidya* and upholding the traditions. Before they start a learning process, they chant together, "*Sahanou yasa: sahanou Brahmavarchasam*" (let us aquire fame and divine energy together). In the generation of *Guruparamparā* for creation of knowledge, *Guru* is the *pūrvarūpa*, *śiṣya* is the *utararūpa* and their *sandhi* is *vidya* and their offspring is prediction (*pravacana*). Medicine being a predictive science, the teachers and students have to chant together, "let us be filled with intellect (*medha*) and by that nectar of intelligence let us develop understanding (*dhāraṇa*). My body and mind are healthy. My words are sweet as honey. Let all the ears hear that sweet voice of love. God is hidden in the cells of intelligence. Let my knowledge be preserved for posterity and propagated by the coming generations (of *śiṣyā*s)." Then the *Guru* continues to pray alone: "Let there be more and more students in my care. Let them come even from distant places. Let them be happy, intelligent, disciplined and thirsty for knowledge."

Whenever an educational institution is trying to draw more students to it, apart from the curriculum and the syllabus, a feeling of oneness and a bond of love between the teachers and students is essential. The students, after leaving the institution, nostalgically remember the people who have given them love, a feeling of security. A good educational institution should be a home away from home, and good teachers should be giving parental (motherly/fatherly) affection, love, care and advice (counselling). They should not be line policemen and women making life difficult for them. Children are always good. The only thing that they need is proper love and care, not to turn to bad things and company.

We have to revive the old *gurukula* system of India where the *guru* is a father/mother figure and the *śiṣya* is the son/daughter and in such a situation only one can give security and a feeling of

belonging to the students and by sharing their happiness and sorrows the teacher becomes part of his/her training programme and of life.

Only by creating such an atmosphere, we can make a happy place to live in and study and work. The happiness (*ānanda*) or bliss is always associated with *sat*, *cit* (truth and energy of intelligence). Happy environment is the best for intellectual and physical work. Each and every faculty member should be able to understand this and create such an atmosphere in the college campus and each and every student should be able to respond to it by their natural instinct. For this the *gurukula* should have good and happy teachers, as well as intelligent and free individuals leading a dutiful and pure domestic life.

Health, according to definition of WHO, is not merely the lack of disease. The mental, spiritual and intellectual health also has to be taken into consideration. A multidisciplinery approach including Āyurveda, yoga, classical music, Indian philosophy of life if implemented in universities and in medical institutions and selected villages, giving all the benefits of existence to the public in all their spheres of development and therapy through a musical medium designated *Rāgacikitsā* is a vision to achieve this result in the long run. The Gestalt Field Theory of Educational Psychology defines human beings as dynamic systems within dynamic systems growing by the environment in the field in which they live, and stimulate growth in the field of their existence.

India's Amendment on higher education policy under Act 6, New Paragraph D reads:

"Ultimately, higher education should aim at the creation of a new society, non-violent and non-exploitative, consisting of highly cultivated, motivated and integrated individuals, inspired by love for humanity and guided by wisdom" (UNESCO World Conference, Paris 5-9.October 1998).

In the Preamble: society currently undergoing a profound crisis of values can transcend mere economic considerations and incorporate deeper dimensions of morality and spirituality. Higher education is to ensure that the values and ideals of a culture of peace prevail and that the intellectual community should be mobilized to that end.

This book, originally devised as a basic textbook and guidebook for students of music therapy in India, has this broad goal to achieve. When I first started to talk about music therapy and its advantages to my colleagues, and to the public, I felt that I was a single tree, trying to dance and make music and rhythm in a quiet forest where the other trees didn't mind whether there was music or not. I had been used to a silence within, which is akin to nothingness, death, or as an absolute existence of God which is bliss incarnate. That silence was a Bardo, and as a British saying, "*an angel's time of passing by, the Ma of Japan, or the space between events.*" The silence between the two lovers, between Rādha and Kṛṣṇa, the most intimate emotion unfathomable and sweetest, the *Pralaya* or deluge or timeless existence in the Present. That silent phase had slowed down the pace of my music and emphasized the word (literature) in me but those words even came from the silence, highlighting the quiet intensity of the singer's voice. Silence begins within the inner space before the first musical sound begins, ends within the space after the last musical sound has finished resonating. The Indian sciences call the silence as *Anahata nāda. Tantra* calls it the *Para, Paśyanti*, and *Madhyama* stage before *Vaikharih* (heard sound). The visions, scenes, dreams, Jungian archetypes in music and their healing properties have been much discussed in the west recently. The listener and the singer have two different personalities and different roles. Similarly, the therapist and the patient have two personalities and two roles. Yet as human beings they are equal in many respects (Kimmo Lehtonen Healing metaphors on music. & 6th European Music Therapy Conference in Finland, July 19 2004). That is like the *Bhakta* and the *Bhagavān* in ***Bhaktisampradāya***, the *jīva* and the *Paramātma* in *Vedānta*.

Ilika Ikuno (Voices vol 1 no:1 April 20. 2001) says how in Japan the term *Ongaku Rhyoho* (music therapy) is used and how it is used for *Fukushi* (social care and welfare extending to every member of society, regardless of economic status) and how this created an upsurge among the youth and the old alike. When such a movement is created through musical awareness, public, political and civil support is gained, educationists are attracted, music appreciation and culture enhanced, and preservation of national heritage and values results along with welfare activities. In my music therapy programme, which I call *Rāgacikitsā*, this is exactly what had happened over the years, and now I find many trees around me reawakened and making their own dance to the breeze. The forest is no more silent.

Fukushi is social work, social welfare policy for handicapped, elderly people, etc. It is for alleviaton of poverty and misery around, using music as a tool for human growth, healthy, natural and social change for total transformation of community and nation. It is for reducing the exploitation of society by undesirable elements, to search for an ethnic identity in modern society so that the diversities of religion, creeds, castes, political parties and sexes will be replaced by a national feeling (Indianness) and that of humanity.

Since Indian culture and value systems, concepts and the music systems are entirely different from the West, it is not advisable to give Mozart or Beethoven to the common man for therapy. The Indian music (North Indian and South Indian) should be used and *Rāgacikitsa* aims at such a programme. At the same time, the Indian student of music therapy should know the developments happening in the West and in the medical research and hence literature survey, sometimes quoting whole articles have become necessary (as a textbook for music therapists, musicologists and students of music therapy and for doctors).

If viewed in this sense as a transformative research, music is not only a spiritual activity but also a socio-political activity. The

world goes round by love, energy, materials and wisdom. The research scientist is therefore bound to provide a written document showing what he/she did, why he/she did it, how she/he did it, what he/she learned from it, and how it, is useful to the society and the world. For me, life is the sum of all the research processes I have done and more than the sum of it, enriching my experience and thought process. Whether it is astronomy, music, history, anthropology, poetry, *Veda* and *Vedānta*, *Gītā*, *Upaniṣad*, medicine, literature, philosophy or sociology, psychology and yoga, I try to compare the East and the West, and accept the good points from each of the branches of knowledge I come across. Each is a river enriching my mind's fields with greenery and each confluence in the Blue Ocean of my consciousness, which I call my Kṛṣṇa. In my eternal waiting in silence for my Kṛṣṇa, who is Love incarnate, my consciousness as a blue lotus of the valley blossoms and my thoughts grow from an ugly duckling to a beautiful swan. My long and fruitful delay in merging with the golden blue ocean of Kṛṣṇa is an experience sung and immortalized by Meera, Tyāgarāja and many other *Bhakti* poets and seers of India. When I write this book, I have presented the recipes from all these branches of sciences and arts, which I have collected, experimented and tasted like a honeybee. But ultimately like the honey in the beehive, the *rasas* of the different sciences and arts have become one in a sweet *advaitarasa*, the *rasa* of musical experience.

The potential users of my observations and experiences can repeat the experiences in their lives and surroundings, and evaluate their own experiences in comparison to mine. This book is both science and art. Logic, clarity and precision are needed for science. Originality, freshness of experience and sincerity of purpose with compassion are needed for artistic works. *Rāgacikitsā* preserves or tries to preserve both and introduces art into medical science, and medical science into the art of music for social change, and for creating employment opportunities for

thousands of music students, and for healing the needy, and developing the younger generations of citizens, for world peace and preserving the heritage of India for the entire humanity. A pinch of salt (science) to humanities, and a pinch of sweet (music) to science make *samarasa* (equalization of taste).

Human experiences (musical experiences called the MLP or musical life panorama), creative thinking and language of love and peace act as positive communications to individuals and society. According to Claude Levistrauss: "If you know the consciousness of a musician, you know everything in the universe." In RSA lecture series (12 April 2000, Paul Robertson), music is said to be the most intimate journey into another person's personal world. When a pan-Indian collaborative research project for healing and alleviation of pain of society through medium of music was planned, I experienced this to be true.

Communication in Sanskrit is *samvedana*, *vedana* is pain. Music takes away the pains through *samvedana* and is an anesthetic, but it is the most aesthetic of arts. It communicates at a transcendental level and superconscious states of aesthetics which we call the *laya yogam* or *nādalaya yogam*. The pun of *samvedana/vedana* and aesthetics/anesthetics is interesting. For this to happen at least two people are needed, one is a singer and the other is a listener (in music), one *bhagavān* and one *bhakta* (in *bhakti sampradāya*), one man and one woman (Rādhakṛṣṇa, śivaśakti). *Veda* calls this a *mithuna*. It could be a *guru* and *śiṣya* or a parent and child or any two people who love each other. Language and music have to convey an idea, a message, an experience or an emotion. They have to touch a listener/several listeners/readers to attain the fruits of research.

Who is touched, by whom and by which (whose) music? Is that a child or an adult? Literate or illiterate? Expert or layman? Intelligent or non-intelligent? Healthy or unhealthy? Scholar or non-scholar? Speaking the same language or non scholar? All

these questions and answers are important in music therapy. There are individual variations for selection of *rāga* and music.

Creativity is like a flower, natural to a plant. Every human being is creative. Only the degree of creativity differs. Flower is beautiful and natural to plant and bears fruits and seeds for next generation. Even a poisonous plant has a beautiful flower. The outcome determines whether it is dangerous to society or not. Both the values and qualities I want to communicate to the society as a listener and the values and ideologies of the singer/musician are therefore important in the context of music therapy as far as I am concerned. Therefore, when I take Subbalaxmi and Yesudas as sheet anchors this also is taken into consideration.

The sustained Yesudas effect he had made on Indian society for 44 years and the MLP of mine are given in the book "Without a Stumble" (Nalapat Books 2003). MLP works with the emotional meanings of experiences, events and memories that are connected with music in one's biography and it can be used in verbal form (talk about music) and in active form (conducting improvisations together). MLP gives opportunity to pay proper regard to both aspects of how to combine psycho-therapeutic and socio-therapeutic work. Life panorama is a word which comes from the biographical work in integrative therapy. From the present we look back on the whole wide panorama of our life development, back into the past and forward into the anticipated future, in order to understand ourselves in our identity, in our life in its entirety. In the course of that process, we look at individual stages of life, but always pay regard to the social context and the time we grew up.

MLP emphasizes experience with various kinds of music that have taken an emotional significance during our life. The effect of music is always dependent on context and mood. It is linked with emotional events and periods in our lives and releases the memory and the feelings that were linked with

specific situations and events in our lives at that time. Recollection of emotions in tranquility, with the aid of music, has an important role in music therapy. If a client remembers his/her musical life panorama, it inevitably brings her/his story to life. This helps us recreate the awareness of musical healing experiences which had been forgotten due to various life situations. In integrative music therapy, it has an active improvising component also. The process is a theragnosis (therapeutics and diagnosis together) for the music therapist in an informal way.

Music as *Nādabrahman* is the key to my spirituality. Listening (*śruti* as *veda* synonym), memory (*smṛti*), cognition (*bodha*), science (*śāstra*), arts (*kala*), concentration (*śraddhā*, yoga), absolute bliss of ecstacy (*laya/samādhi*), perception (*darśana*), sound, name, chanting (*nāda, nāma* and *mantra*), light and form (*prakāśa, rūpa*), colour/pronounced (letters) (*varṇa* and *dhvani*) are studied with comparative Eastern and Western concepts, scientifically/aesthetically, synthesizing ancient and modern thoughts and its natural powers (*śakti*) merging in the *Śiva* concept naturally. The balancing of Śivaśakti, Rādhākṛṣṇa, *Brahmaprakṛti*, yin yan or seemingly opposite ideologies for a peaceful and happy coexistence, in a physically, mentally, intellectually and spiritually healthy environment is my *Maha-advaita* of existence. Spiritual health means the satisfaction of the highest intellectual, moral and aesthetic capacities, in this context.

Though primarily devised as a textbook for music therapy students, this is an interdisciplinary comparative study of both modern and ancient concepts of astronomy, yoga, psychology, medicine, music, philosophy and cultural heritage of humanity and is for the total human development and national integration and global peace through Indian philosophy and music. Because of this, it will be useful not only to music therapists and musicologists, but also to every individual on earth who cares for a peaceful coexistence on earth and who values Love as God.

Key to Transliteration

Vowels and Diphthongs

अ	a		उ	u		ए	e
आ	ā		ऊ	ū		ऐ	ai
इ	i		ऋ	ṛ		ओ	o
ई	ī		ॠ	ṝ		ऑ	ô
			ऌ	ḷ		औ	au

Consonants

Gutturals		Palatals		Cerebrals		Dentals	
क	ka	च	ca	ट	ṭa	त	ta
ख	kha	छ	cha	ठ	ṭha	थ	tha
ग	ga	ज	ja	ड	ḍa	द	da
घ	gha	झ	jha	ड़	ṛa	ध	dha
ङ	ṅa	ञ	ña	ढ	ḍha	न	na
				ढ़	ṛha		
				ण	ṇa		

Labials		Semivowels		Sibilants		Aspirate	
प	pa	य	ya	श	śa	ह	ha
फ	pha	र	ra	ष	ṣa		
ब	ba	ल	la	स	sa		
भ	bha	व	va				
म	ma						

Conjunct Characters

क्ष	kṣa	ज्ञ	jña	and others similarly

Anusvāra	Anunāsika	Visarga	Avagraha
ं ṃ	ँ ṅ, ñ	ः ḥ	ऽ ’ (apostrophe)

and does his *dharma*. This activity generates culture and values. Culture is a growth for a microbiologist. There are three levels of culture or growth.[4]

1. The first level is most superficial that gives identity to a person, to a people. Makes them distinct from others. Dress, food, festivals, rituals on birth, death, marriage, external behaviour, social etiquettes and interactions. These can change with time or can continue.

2. The second level is the architecture, music, dance, literature, arts, crafts, planning, organization of life which defines a person's abilities and growth.

3. Third, the deepest, often misunderstood, or not understood at all is the level of meanings of the second level and first level, which is called meaning of philosophy, meaning of music or philosophy of music etc. This is at the level of spirituality. In India, these are associated with *Bhūtadaya* (*karuṇa* or Pathos), *vidya* (wisdom/education), transcendental levels of consciousness (*prajña, pratyabhijña*). Music therapy spans over these three spheres of culture. It is part of everyday life, of festivals and rituals (level 1), the level of musical development and its interconnectedness with other branches of art and science of India shows the second level (as part of Indianness, or nationality, cultural heritage, and unifying principle of our country), and finally when we go to deeper realms, it is the divine *Nādabrahma*, taking us to the beginning of time, and to timelessness in a cyclical spiral, touching spiritual depths of our self, and the universe. India always has a global perspective when she says"*Lokā samasta sukhino Bhavantu*".

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4 *Transformative Learning: Educational Vision for 21st Century*, Edward O 'Sullivan, University of Toronto Press, Zed Books, 1999, vision for curriculum, pp 198-201.

An idea of an Indian foundation of *Rāgacikitsā* with a global perspective is essential for achievement of the desired results in quality control. The need of a national and international global perspective is to:

1. Check unauthorized therapists.
2. Without licensing from the state and the nation and without knowing what is happening in the world music therapy forums, practising the discipline at individual levels can be harmful to the discipline in the long run.
3. People without awareness of the professional ethics and medical implications can complicate the issues
4. Hospitals/doctors without knowledge of the traditional Indian music and its healing properties may read articles coming in the world forum and introduce western music (not western classical) which can be detrimental to the patients.
5. The most important aim is to introduce humanity into the field of medical science and science into the field of art of music. Introduction of modern scientific methods of investigation into the art of musicology will provide a common platform for artists and scientists to cultivate fruitful relationships, which is good for the nation and the world, in the long run.

The focus should be on:

1. Clinical practice,
2. Music therapy methods,
3. Research and development, and
4. Professional issues.

In the Liepzig Neurosciences Music Conference 2005, it was decided that research models should focus on needs. The dilemmas raised in the conference were,

1. EBM (Evidence based medicine) insists on references in a recognized journal before a research paper is taken as acceptable.

2. In an infant science like music therapy, if the case histories are not faithfully recorded and shared between practising therapists, how can we create EBM?

3. If the researchers do not create EBM by their own clinical trials or experiments but clinicians see an improvement in their client's physical, mental (not to say anything about intellectul and spiritual) faculties, and happiness on the faces of the relatives which one should be considered more important?

4. Is not the satisfaction/happiness/improvement in individual patients/relatives worthy of consideration as evidence?

The contribution of we, the Indians, to this global thought is what I mean by the title of the chapter, Music Therapy in an Indian Perspective as a Global Theme.

Many of the research activities of the institutions and academies have become passive and the funds that go into the research do not bring the expected results to the society. This is not only in India but also in the United States of America. To overcome the passiveness of this research process, the research has to be changed into an active transformative process involving the entire society rather than restricting it to one institution alone. There is limitation of studying a complex real social situation or event within the four walls of the laboratory and for overcoming this Curt Levin introduced term active research. Active research in music therapy:

1. States a problem situation.

2. Establishes roles for musicians, therapists, clinicians, laboratory staff etc etc.

3. Declares the methodologies.

4. Describes the existing theory and practice.
5. Does a pilot project to prove.
6. Gives awareness of the new programme including workshops and seminars to various concerned groups.
7. Rethinking and taking part in the changing process.

If the problem is solved, the social research ends. If not, it continues, and we will have to reflect upon the experiences gained so far, record all our learnings/thought processes on the problem subject, in relation to the methodology, framework of ideas, areas of concern, etc.

There is an endpoint for a clinical research. But for a social research, the endpoint is only a temporary one for rethinking and the process continues.

ENGRAM[5]–MEMORY TRACE

You can assess yourself or others (writers/speakers/singers) from the words they use and the music they choose to communicate. Engram means whatever is in the organism, which accounts for his/her memory, presumably some structural change in the brain—memory, intelligence, learning behaviour, dreams and aspirations, all included. RNA molecules are repository of the past activity related to experience. A quantitative change in the RNA and synthesis of new proteins happen during learning. Children, even the mentally retarded ones, have a memory or a detailed picture of a scene or experience. A dejavu experience or "I have seen this place before," feeling or a *dejavu entendu* (I have heard this voice before feeling) or a tip of the tongue feeling, relearning a forgotten poem/music etc. are all part of eidectic memory. Dream, memories and creativity are interconnected. Many

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5 Engram-memory trace or neurogram. Ch 10. Remembering and forgetting. pp264-265. *Introduction to Psychology*. Norman. L Munn, L.Dodge Fernald, ed. Leonard Charmichael. 3rd Edition, Oxford IBH. 1969.

musicians, mathematicians and scientists have created their works from altered states of consciousness and dream visions. Then how can we separate art and science? How to separate subjective from objective? For the materialists, the human brain, neurons, neuronal peptides, for the astro-physicists, soundwave and light particles, and energy which is matter itself, for aestheticians, *Nādabrahma*, for atheists, nature, and for theists, God, is the cause of these visions and the experiences. This subjectivity of explanation of the same experience and the attitude that "I am right, you are wrong"[6] has created lot of problems in society. The fact is that the experiences/visions are the same, only the explanations differ. Hence the experience or vision is objective and the explanations (even that of science) are subjective. Once we recognize this, the differences disappear, and unity establishes itself. In the twilight language of a Yogi/Zen/Caraka/Advaitin/musician/ explanations are similar but their languages differ. Reader-oriented or listener-oriented theories of *Rasa* in language, literature and music give more meaningful expressions to what is said or sung by the author/singer. Therefore, the communication process between two people and the transformation is the total effect of literature and music. And naturally, *ṛāgacikitsā* is not just another method of treatment, but a universal communication for integration of souls, national integration and world peace. Hospital practice is only a part of it.

1. It is a transformative research.
2. For society, nation and world for a peaceful coexistence.
3. For alleviation of pain (physical, mental, intellectual, spiritual pain).

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6 *I Am Right, You Are Wrong*, Dr Edward De Bono, Penguin Books, 1991.

4. Educative tool for children—normal and mentally handicapped.

5. Research tool for analytical and creative music therapy for betterment of life on earth.

6. As a branch of narrative and family medicine and hospital-based practice also it is used for collection of data and further development of the discipline.[7] There are three levels of educational vision possible: cosmic consciousness, human consciousness, and personal (life disciplines). Of these, personal consciousness can be of four types:

1. Personal nonreflective,
2. Emergent (survival),
3. Critical, and
4. Visionary.[8]

When we plan a curriculum, it should integrate social sciences and medical science with anthropological and health psychological considerations.[9]

Quite unlike the classical Newtonian research, quantum research is nonlinear, creative, holistic, causal, and non-hierarchical with no subject/object split and it is evolutionary in nature. Systematic research should touch four areas.

1. Philosophical: Analysis, criticisms, speculations and comparisons come under this.

2. Historical: Reviews, surveys, past information available on the subject are historical in nature.

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7 Nicholas Walliman: *Your Research Project*, 2nd edition. Vistar Publications, New Delhi 2005.

8 *Transformative learning: Educational vision for 21st century. Edmond*. O. Sullivan, University of Toronto Press Zed Books 1999. pp 198-201, vision for curriculum.

9 *Culture and Health: A Critical Perspective Towards Global Health*, Sec, ed. Malcolm. Mac Lachton. John Wiley Sons Ltd 2001.

3. Descriptive: The current status of the profession, case studies, descriptions of work, training programmes, etc. fall under this category.

4. Experimental: Results of structured research and presentation of future research plans, etc.

As far as possible, I have made it a point to touch all these points in this book.

A few useful hints for the prospective music therapists who want to follow the profession:

1. Make it a point to obtain an informed consent (preferably in two languages, one in the patient's mother tongue).

2. Each institution should have its protocol, proforma, assessment charts, time limit set and evaluation strategy beforehand; statistics, discussion and analysis afterwards.

3. Have controls along with clients.

4. Open mind of assessment is needed.

5. Evaluations—pre and post—during music intervension is to be done.

6. Assessment can be summative or formative.

Table 1

Assessment

SUMMATIVE	FORMATIVE
1. To show students are fit to go to the next stage of training. A formal requirement. Results to be recorded.	1. To enable students to judge how well they do at each stage of course and identify any weak point to be corrected. No formal record need be kept of the results
2. To gain degree. Requirements A. Specify the early level prerequisites. There is no need for a written exam or multiple choice questions. But a pass in all the special study modules is needed.	2. Methods A. Informal and ongoing.

B. Acceptable record of attendence of teaching/learning activities like problem based tutorials. Communication and clinical skill courses. Specified practical/clinical work Project work. Dissertation.	B. More formal assessment.

Informal ongoing assessment

1. Feedback from PBL group and teacher.
2. Guidance from teachers on communication, clinical skill courses.
3. Completion of self-assessment questions. These give guidance on both the breadth and depth that directed self learning should take at each stage of the course.

Formal formative assessment

1. Progress tests (mock examinations) which take the same form of summative tests. These give experience of the examination format, in addition to information in progress. Progress test should be done at end of each semester, unless there is a summation assessment at the same time. Participation is compulsory but marks are not kept as part of the formal record.

This is necessary for monitoring the quality control of music therapy. According to the Central Council of Indian Medical Act, 1970, alternative medicine is acknowledged as a certified course, but so far, there is no proper course on music therapy, though there are several music colleges. My book aims at recommending the Government both at national and state levels to look into this very urgent matter. Hence, a detailed prospective curriculum is drawn out, after verifying the feasibility of the treatment, and a course in the new discipline, using Indian music. The concept of a medical university for Kerala, on the basis of MUSC and the concept of

Indian universities for nation-building by R. P. Singh[10] is utilized for formulating a final picture of my project. Other references, which were useful, include, WFMT[11] education symposium, AMTA website[12], Florida State University educational programmes[13] and qualitative and quantitative perspective on music therapy[14].

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10 *Concept of Indian Universities for Nation-building* by R.P.Singh.

11 WFMT education symposium. November 1999. Washington DC, New developments in music therapy. Barbera Hesser. MA, CMT, New York city.

12 AMTA website.

13 Florida State University educational programmes.

14 Wheeler B. Music *Therapy Research: Quantitative and Qualitative Perspective*. PA. Barcelona Publishers.

1

Medical Ethics

In 1925, seven social sins were mentioned in the *Young India*.[15] These were:

1. Politics without principles,
2. Wealth without work,
3. Pleasure without conscience,
4. Knowledge without character,
5. Commerce without morality,
6. Science without humanity, and
7. Worship without renunciation of ego.

At present, after 80 years of this passage in *Young India*, India and the world as a whole is witnessing all these seven sins (I would like to call them as 7 *apaśrutis* of society which can be rectified through music-friendly communications) and people want a national and a global upsurge or reawakening of principles, values, humanity for global peace, and international unity through love and understanding of different cultures. This is possible only through communication and through transfer of ideas, and among the means of communication music, the natural and universal language of harmony, is the best. Hence, I bring out this book with a prayer in my heart and a dream of

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15 Eternal Values for a Changing Society: Swami Ranganathananda, Bharatiya Vidyabhavan Education Series, Quoted from *Young India* of Mahatma Gandhi.

Can we ever get out of the frustrating malpractices of our profession? Can our profession become beneficial to society by enforcing a set of medical ethics which can be of use to everyone in the society?

Gestalt

Based on Gestalt[17] psychological studies, I give an emphatic answer YES. Gestalt is a set of patterns. A dynamic system within a dynamic system acting upon each other we learn from the world around. Thus, we change our views and attitudes to life, we educate ourselves, and by our learning, wisdom and experience we can change the world around from which we have learnt.

As shown below in figure, our environment gives us values, its good and bad aspects which we imbibe. Individual, in turn, can contribute to the socio-political, economic, spiritual and cultural environment by actions, thoughts, and speeches (*karma*, *manas*, *vāca*). Prophets and great personalities were doing this. Every individual has the potential to do this. If such a personality is amongst us, he/she is an asset to us, to the world, nation, state, or institutions, and to home where he/she lives and works.

FIG 1. Gestalt

E—economic environment

P—political

C—cultural

S—social

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[17] Gestalt Psychology, pp.320, 649-650, 656, *Introduction to Psychology*, ed Leonard Carmichael, 3rd ed. 1969

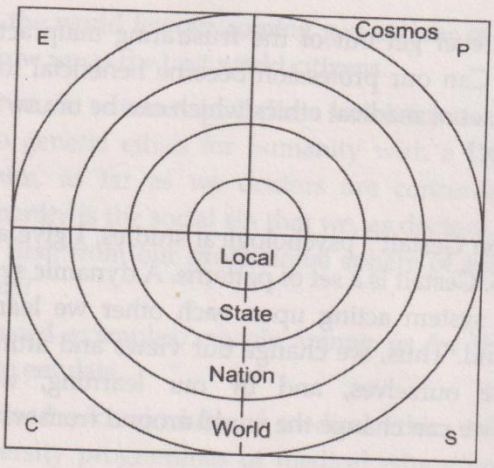

Fig 1.1

Social contagion theory of Alport[18] is worth mentioning in this context. A person with a strong ethical background is the real cream of society, not the one who has got into a particular profession. Such creams of society should be there in the healing art. Medicine is not a mere science as the medical professionals (many of them!!!!) think, it is a science and art combined. It heals the wounds of the body and mind and the wounds inflicted by the environment on the human organism as a whole. It is a profession concerned with healing of body, mind, intellect and the soul. A purifying act, a noble profession, indeed!!

Therefore, there is a dire need to recognize our role in society.

Everyone knows that ethics should be part and parcel of human life to have a good social life. But many do not know how to apply them in day-to-day life, especially in a corporate, competitive world, where the morally strong and disciplined people are sidelined and marginalized by the clever and the immoral. It is here that we should understand the golden formula, I mentioned earlier. $E=e^3-f$.

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18 Alport's social contagion theory. Alport G.W: *Patterns and Growth in Personality*: New York, Holt Rinehart and Winston.

How to decrease frustration?

1. By concentrating on your professional excellence, improving the quality of work done in profession.

2. By concentrating on a universal language through which you can communicate to all (music) as a healing art.

3. By understanding and practising the golden rule of all ethics (including medical ethics) is that human life is a divine blessing—a sacred, precious opportunity to love and serve others and thus to participate in a divine plan.

Remembering that all of us are children of God, will alter our relationships and make our works better and we feel that we are serving the divine sparks of nature by our *karma*/profession. By this feeling we ourselves are manifesting our divine nature.

Naturally, it follows that a doctor, practising his/her profession, with a feeling that all are children of God, cannot discriminate them on the basis of caste, creed, sex, or social status. They are needy, approaching to be served, and he/she the healer of pains, (bodily, mentally or intellectually). They are the less fortunate children, and she/he the more fortunate one to have had a chance to serve them. The *ātsa* or *ātsi* of God who heals the children of God.

The *ātsa* in Arabic is translated as the Abdul of God, who heals with love, compassion, and (medical) knowledge. In Buddhist and Hindu traditions the *mahābhiṣak* (great doctor) is described as one who has a *bhinnacakṣu* (different view). Through the spirit of service and love, we keep alive the spirit of God. We eliminate hatred, jealousy, quarrels, classwars and religious persecutions (the opposing qualities which spring from our ego, known as *Kāma* in Indian traditions and satan in semitic traditions). Thus, reduce the pains of society. By removing the opposing or negative qualities in ourselves, we can eliminate them from society.

Our selfishness makes us think that we need everything best. We want every luxury and every profession has become just a means to get them. When we don't get what we need, we become

disturbed, angry, jealous, and frustrated. When we get it, we become vain, self glorious, proud snobs. Acquisition of wealth is not a sin if done with fair means. It improves the economy of our society. We have to curb only malpractice, not practice of profession.

Satisfaction in life

We should feel happy for what we are. We are doctors, well educated, fortunate to have the opportunity of the noble profession of healing art. We know that all the differences in status—castes, religions, creeds and languages—are human constructions. Look beyond the human constructs of differences, to see the eternal truth. The cell functions in the same way in all humans, the biological, morphological, physiological, pathological phenomena follow the same rules in all humans. Is there any difference in a squamous carcinoma cell of a Hindu, a Muslim, or a Christian? All look alike under microscope.

A teacher has a divine wick in his/her student to be kindled. Kindle it with knowledge, enthusiasm and goodness. The pay and the economic benefits will naturally come when you practise the profession.

How do you work and learn?

There are four different ways depending upon individuals.

1. With *śraddhā* (concentration) doing work and learning profession.
2. Practising profession without knowledge or *śraddhā*.
3. Without knowledge but with *śraddhā*.
4. Without *śraddhā* but with knowledge. It goes without saying that the first is the best way. A doctor having this method, having compassion to all living things, is the *Mahābhiṣak* (the great doctor) in Indian traditions, both Buddhist and Hindu.

To restore values to the society we have to keep values ourselves. We find unhealthy competition everywhere. Observe the world around and find out the fields where there is erosion

of values. You will be surprised. It applies to medical field too. But don't get frustrated over the scenario. Don't get entangled in the grievous practices and keep away from them. Cultivate efficiency, gain experience and expertise and keep up the enthusiasm throughout your life. Create an atmosphere of positive values around you. Initially, people will laugh at you for being impractical in a competitive money-oriented world. But, later on your life and ideals will be appreciated. You will get the satisfaction of having infused values into a society where you lived and learnt, by words, deeds and thoughts. Build up a new world around you, healthy in every aspect, without separatisms, or negative thoughts, with love and harmony and with a feeling of universal brotherhood. Health is not mere physical health, it is mental, intellectual and spiritual health. Be steadfast in your decision to achieve this golden state of health for all.

There is no shortcut to medical ethics. Practise ethics rigorously throughout life and you will reach a stage when your example will spread light into the lives and minds of many.

Einstein rightly said,"I don't teach children. Give them an environment to learn."

Music, the universal language of peace on earth

Music is a universal language, enjoyed by all, including birds, animals and plants. The cosmic music of the spheres and stars is in each and every one of us. Reducing stress inflicted by the worldly life of day-to-day existence through harmonious music is an age-old custom and practice of human race. The use of *rāga* as a therapy is the key to achieve the universal brotherhood, love and international harmony and peace; at the same time giving physical, mental, intellectual and spiritual health to all of us.

The efficiency of human beings is increased by soft melodious divine music which brings down frustrations, increases power of concentration, cognition and memory, and thereby our performance in the world stage.

2

Organising a Research Process

From Passion to Compassion and from Anaesthetic to Aesthetic

The three characteristics of a research process are: we gain a systematic controlled experience in activity, we develop a reasoning power to operate in an abstract world, and along with experience and reason, research is self-correcting process which involves rigorous testing, scrutiny and criticism. The basic research questions that have been thought out in the creation of this book are:

1. What am I doing or going to do?
2. Why is it done?
3. How am I doing?
4. When am I doing that?
5. What is the purpose served ultimately to society or world?

I have used three types of language in the book:

1. Informative,
2. Expressive, and
3. Directive.

Argument in research is a basic element. The minimal ingredients of an argument are:

1. At least one statement should be reasoned for and arrived at a conclusion.
2. At least one statement should support it.

3. Signal or suggestion (logical indicator) that an argument is under way should be there.

Plan the timeframe of the study (if three years are the time-frame of study) as follows:

YEAR 1. TERM 1. Literature survey
TERM 2. Design study, fine details
TERM 3. Contacting stage 1, pilot study stage 2
YEAR 2. TERM 1. Main study
TERM 2. Main study
TERM 3. Stages 1, 2, 3
YEAR 3.TERM 1. Stages 1, 2, 3
TERM 2. Write up
TERM 3. Write up.

Check list for outline of methods

1. Literature survey and critical analysis.
2. Consultation with experts.
3. Identification of research population or situation.
4. Sampling, size of sample, location of samples, number of case studies.
5. Data collection methods: Questionnaires, informal interviews, talks, study of documents, observations.
6. Analytical methods: Quantitative, qualitative, combination of both.
7. Evaluation of results.

I use an integrative model of human ecosystem (Hancock and Perkins, 1985 q pp. 25, Culture and Health, A Critical Perspective Towards Global Health).[19]

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19 Hancock and Perkins, 1985, Mac Lachlan, Malcolon, *Culture and Health: A Critical Perspective Towards Global Health*, 25 Chichester: JohnWiley, 2006.

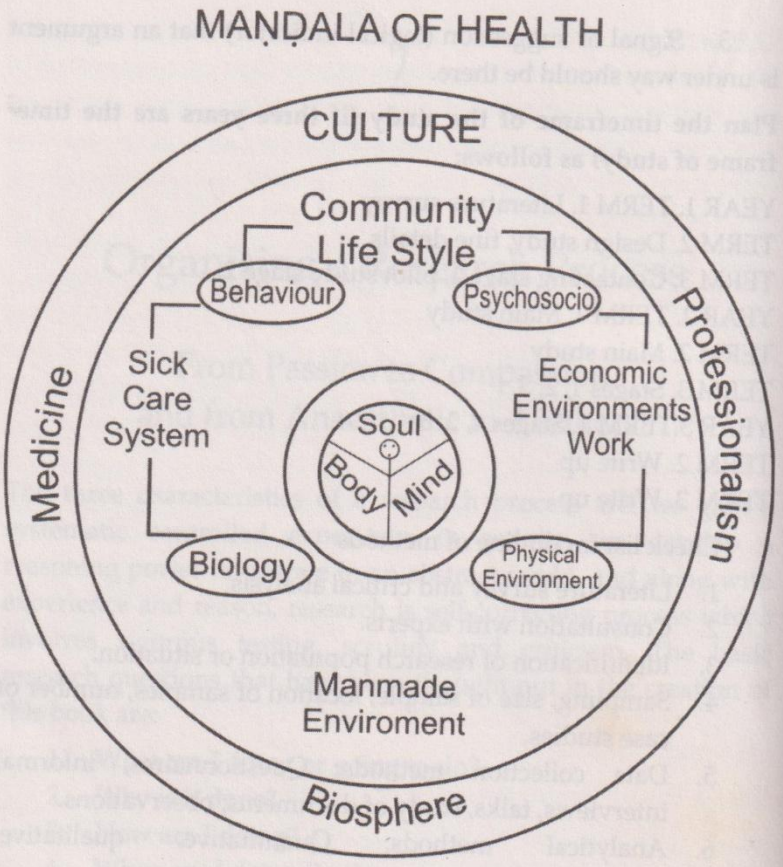
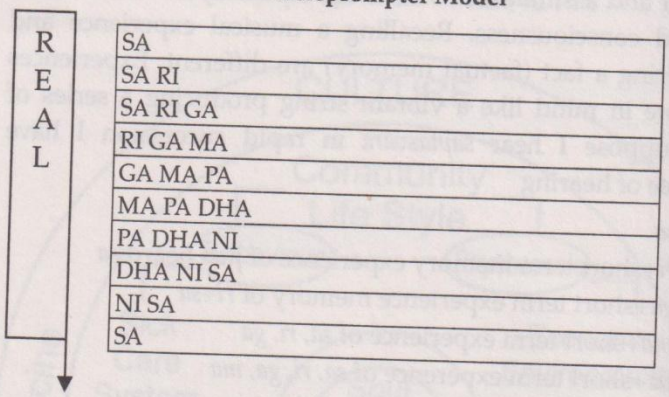


Fig 2.1

***Maṇḍala* of health: An integrative model of human ecosystem.**

The research, the curriculum, the solutions for a healthy living are all planned according to these considerations. In maintaining the heritage cultural identity, both the strategies of the ethno-cultural groups and the strategies of the larger group (here India and the world) are to be taken care of. Integration and assimilation are the strategies taken for it which are stress free (not separation and marginalisation). In creation of balance, both the eastern *Śivaśakti*, *yinyan* and western alignments are

Teleprompter Model



PHENOMENAL TIME

Arrow down shows real time, horizontal arrow is phenomenal time, and the opposite arrow is the mental tracking (Brentano).[20] The descendants of the notes mentally identified as original automatically come to occupy the same cognitive niche established and thus we get the original *varṇa*, even after thousands of years (*varṇas* are indestructible in human memory). In temporal overlap model, musical notes (phenomenal items) have continuous sequence of overlapping. Draw 10 braces instead of boxes.

sa } ri } ga } ma } pa }dha }ni } } } } ie, 7 *svara* and 22 *śruti* make *anantam* experience possible, easier to think in terms of brain events.

First and second order phenomenal changes.

First order when the *kuccheri* starts silence (*mouna*).

Second order changes one perspective to another, and afterwards *smṛti* (memory).

20 Brentano, 1978., pp. 247, q in pp. 270, *Mind, Brain and Quantum.*

compared and assimilated. Ultimately, the study is one of brain, mind and consciousness. Recalling a musical experience and remembering a fact (factual memory) are different. Experiences reverberate in mind like a vibrant string producing a series of frets. Suppose I hear *saptasvara* in rapid succession I have experience of hearing

1. *sa*
2. *ri*+short term memory experience of just heard *sa*
3. *ga*+short term experience memory of *ri+sa*
4. *ma*+short term experience of *sa, ri, ga*
5. *pa*+short term experence of *sa, ri, ga, ma*
6. *dha*+short term memory of *sa, ri, ga, ma, pa*
7. *ni*+short trem experience of *sa, ri, ga, ma, pa, dha*. That is analysis of experience of succession. With 5 or 7 notes we are dealing with the memory of memory of memory of memories of 5, and+memories and memories of 7. The intervals of notes, (gaps) and the *mātrā* can be extended and then it is impossible to analyse the memory of it like that in the conventional way. Therefore, the method of permutation (in Sanskriti *kuttakam*) is applied for the experience. In a teleprompter model, each listener's state of awareness contains within the same psychological simultaneity plane a sequence of phenomenal (not temporal) notes or a phenomenal awareness of time. Below see a teleprompter model of three successive notes *sa, ri, ga*. Draw 10 cells (box) which are 10 successive time slices of the listener's stream of consciousness corresponds to the cross-section of the world tube of the listener's brain. Remember that there is an infinity of boxes between the boxes shown.

corners of their minds. It originally belongs to the *Desi* or regional music of the country sung by the women and common people and by the temple priests and chanters of the *veda* hymns.

Melodies induce a feeling of well-being which translates into regularized cardiac functions, lowered blood pressure, and appearance of alpha and theta wave frequencies in the EEG (Pinto, Jerry (1994).[23] It is therapeutic in two ways: 1. Preventive and 2. Curative. Ramakrishna L, (1990 Music therapy)[24] has given 4 principles for general music therapy.

1. Contrasting medicine (contra). Just like a cold sponge bath during a high fever. This method is by introducing a music totally different to his/her mental state or mood.
2. Similia. Homeopathic principle, "like cures like." Music of the same type as the mood of patient.
3. Iso. Principle of vaccine. The same type of mood given to intensify symptoms (the difference from "similia" is not very clear) and then tonning down the treatment.
4. Pallia (palliative) as a tranquilliser.

Thalamic response theory of musical influence (Altshuller G).[25] Music is perceived in the sub cortical level, in the Thalamus which is the seat of emotions, feelings and sensations, quite unlike the spoken word perceived in the cortex according to early experiments and the response to music is automatic and unconscious. Yet, the mechanics of the human brain and how it receives the musical sound must be known to understand the chief significance of music therapy.

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23 Pinto, Jerry (1994), High Frequency Medicine. The Sunday Review. *The Times of India*, August 14.

24 Ramakrishna L. (1990), *Music Therapy: Studies in Indian Music and Applied Arts, ed* Leela Omcheri, Deepthi Omcheri Bhalla, vol 5.

25 Altshuller, G 1944, Four year experience of music as a therapeutic agent at Eloise Hospital, *American Journal of Psychiatry*, p.100, 792-794.

Psychoanalytical theory of music believes that it is a tonal analogue of emotional life and is a form of auditory thinking that can be emotionally truthful in a way that language cannot (Lehtonen, Kimmo 1986).[26] Early childhood is the time of auditory thinking and therefore music is related to even a child's thinking and consciousness.

Cognitive view

Some people prefer a cognitive view that musical experience is more a matter of cognition than perception. People say that music is a divine inspiration, an elaboration of preexisting structure and processes and also that it is a reflexion of inherent mathematical order in nature. All these different opinions are coming under cognitive theories and we can observe the composing behaviour, performing behaviour, and listening behaviour and see that all are true. The communication viewpoint holds that the composer/poet/performer transmits a message to the listener and if the listener is dumb to the message the music fails. Here the listener-oriented theories of music (like the reader-oriented theories of literature) become very important. The message is always an emotional one and the listener should be emotionally receptive and cognitive of the reception process and is subjective to the involvement and knowledge of the listener. Hence, success of a music performance is equally dependent on a receptive listener, as on a quality performer (Tansley was of this opinion). In other words, I would say that communication of an idea and message of spirituality/emotion as feedback from listener to musician and from performer to listener in a communication cycle is essential for improvement of quality of music. A listener who wants to hear quality music always stimulates the performer with positive feedback. Feedback is not a conditioned response. It is a voluntary

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[26] Lehtonen, Kimmo 1986, Some thoughts about theory and practice of music therapy: *Psychological Abstracts*, vol. 73, no 10-12, p 3303.

change in the signals to produce some goals. We are not doing something for the patients, but teaching them to do something for themselves, increasing their self-confidence or self-efficiency. The effect of music can be measured by any of the conventional biofeedback devices in clinical psychology or in combination as a research programme in music therapy research.

What is a person's personality? What will a person do in a given situation? Or what are the patterns of traits unique and consistent to each individual? How does a person react to stressful and personal grief situations and how does a person find peace with oneself and with the world?

Heredity: Interaction of heredity and environment and the past experiences in life make one react to situations in a particular way. Adler formulated a simple personality theory with 6 crucial concepts of which social interests and creative self of the musician and the music therapist is important in this juncture. Erich Fromm's opinion that a person finds meaning in existence and realizes full potential as a human being within the context provided by society is very interesting. Does every man get this opportunity? If not, music can be used as a solace to heal the wounds society has inflicted had been my concern in the past. This does not mean the clinical personality of a neurotic but the normal personality of a human being who had been denied the opportunity to express the full potential, due to various reasons, and which turns him to a neurotic. I had experience with a very intelligent, very sensible, socially committed and loving individual who didn't get the opportunities to develop into full potential and how he collapsed under that stress and strain. The only solace given to him was music, films and sports. Every person born as a normal child, but some made into neurotic/criminal by bad planning of society/parents/teachers and their false norms and mistreatment. This lack of opportunity has to be corrected. So that they can get back to normalcy with proper awareness programmes and musical intervention to create a healthy nation and the world.

Musicality being a trait of everyone's personality as a biological heritage, if it is developed properly by constant music training, listening can make our personality wholesome and pure. This musical part of our personality, if it is strong and made perpetual by constant listening, makes us soft peace loving individuals who love quite and beautiful nature.

The Indian theory of musicality is a trait in everything in nature, including all human beings and, in the West, musicality is considered as something present only in some gifted individuals. Indians also say that though music is in everybody, the distribution is not similar in all depending upon various other factors including the environment. People with high musicality are extroverted, emotional and romantic, and respond more to music feedback, according to some researchers in the West. But in the East, even the quite introvert is a highly musical being and he too responds to music equally well.

In research, the first part is exploratory research, describing and explaining the problem area with literature survey, and second part is explanation, testing and control. These two are quantitative as opposed to qualitative research in the former step.

The aim of research, specific analysis, objectives, associated research questions, the preferred paradigms and degree of desired result control, the level of investigators, intervention, available resources, timeframe, aesthetics, etc. make the research style of each investigator unique. The findings should be statistically analysed, and submitted to the apex body for review and from time to time the progress of the research should be reported (see the flow chart at the end of the book).

What type of music given to the patient is important in determining the results. The music, the voice and the *rāga* chosen should be sent to the governing body consisting of eminent musicians for approval.

Music, in therapy, is to establish contact and facilitate rapport with the subject and is an opening wedge between therapist and client. A mother is using this when she puts her baby to sleep with a lullaby. A school teacher uses this with her students to establish a relationship with them. It is a creative therapy used with children but can be used to establish a rapport with patients as well. The emotions, aesthetics, creativity, etc. are important here, just as a musician establishes a rapport with his *rasika*. This is a normal way of relationship, a very lasting friendship and concern established with the world.

But in music, as therapy, the therapist is not concerned with these, but with the functional music, or the healing induced by the music.

Improvisation technique is important in all programmes of music therapy. Nordoff Robbins [27]approach allows the child to draw a musical self-portrait (self analysis) and the relationship of the personality and this self-portrait is utilized by the therapist (if it is a child with disease) or by a teacher (if normal child to improve his potential). Thus, the same technique is used in normal and abnormal persons but for different goals. The development of personality, spiritual, intellectual, mental and physical health in a normal child in a musical medium is the aim of music education. To make human beings to be humane is its goal. Music gives improvement in arithmetic, geography, writing skills, etc. in school children according to several experimenters.[28] Music gives a sense of discipline, unity, love and respect for other languages and religions. The ultimate aim of music is the *Advaita* or oneness of all creations.

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27 Nordoff Robbins approach (Creative MT). Nordoff, p; Robbins. C. New York, John Day 1977.

28 pp 147. *Music Therapy: Theory and Practice*, application of music therapy by Manorama Sharma.

As a doctor/music therapist, I use music for alleviation of pain (mental, physical, intellectual, spiritual) of individuals and of society, and offers music as a panacea for world peace.

The Musical Life Panorama (MLP)[29] project as a facilitating method in the field of clinical and socio-cultural music therapy was introduced by the *Nordic Journal of Music Therapy*

The Musical Life Panorama (MLP) is a method used in Integrative Music Therapy for psychotherapeutic and socio-therapeutic issues. It works with the emotional meanings of experiences, events and memories that are connected with music in one's biography and it can be used in a verbal form (talking about music) and in an active form (conducting improvisation). It helps to initialize and deepen the process of coping with the collective and individual dimensions of socio-cultural changes.

Each society has to cope with dissonances caused by sociological/socio-political changes just like an individual within the society. My task is to show how much a music therapist can do to help such individuals and society to cope with individual and collective problems that disturb the peace on earth. MLP, which combines socio therapy and psychotherapy, is used for this.

Life Panorama relates to biographical works in integrative therapy. When we look back into our past and into our future, to understand our identity as individuals, our life in its entirety, we have certain stages or stations in our life, which are permanently there in our memory (portrayed and captured) paying regard to the societal and social context and the time in which we grew up. MLP emphasizes the emotional significance of music in our lives. The effect of music is always dependent upon context and mood, linked with emotionally significant events and periods in our development, and releases in the memory the feelings that were linked to the specific situations and events of our life at that time.

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[29] MLP project, *Nordic Journal of Music Therapy, 7(2),* (pp 104-112, 1998).

Thus, if we want to look at our development recollections with the aids of music has an important integrative role to play. If a person (a client) remembers her/his music, it inevitably brings her/his own story to life.

Thus MLP gives a synoptic overview of our life (the patient's life too) and a synergetic panorama of all important events in it. This makes it possible to find meaning for many of the sad or painful events that happened in the past, to recreate awareness of healing experiences, which had been forgotten.

MLP as integrative music therapy has an active improvising component. In a relaxed group discussion, on which kinds of music or what type of music had been important in one's life and how provides a point of departure for musical representation of certain phases of events in his/her life. This technique corresponds to a combination of diagnosis and therapeutics, which the Nordic group calls Theragnosis (Diagnostic approach itself has a therapeutic effect when we use music). The tetradic system involves an active improvisation of the perceived of the remembered and only then it will be reflected and integrated forever as a permanent effect. MLP here includes music discussions and exchange of music as a value in itself (the narrative technique) and improvisation in the sense of the conducted improvisation by contrast to dyadic improvisation representing a relationship. MLP and its improvisation is actually using a very ancient method called *maieutics* used by Socrates.

Maieutics in Greek means art of a midwife. A series of skilful questions and answers to elicit a wise (correct) answer. It is a structured discussion, with some introductory questions, and questions of understanding, then creating links with the participant's experiences and summaries and gives a name to the summaries raised.

Hence, in my music therapy programme my first session is an informal conversation with my client to help him/her remember the best pieces of music which influenced his/her life

events. As a therapist, I too try to go into that music, and into that world, and understand how much the patient feel or taste the sound/the *rāga*/the nature, the symbolism in the music, the moods, emotions, recollections, emotions and atmosphere that comes up, and to deliberately sets them into proper relationship with the music suited for them. If in a group, only one is in discussion with the therapist and the others should not colour the feelings of the active protagonist with their own emotions which may have negative effects. A one to one relationship is ideal for a therapist/patient because of this possibility. Sharing the group emotions before getting a direct positive feedback from the therapist/active protagonist team can either destroy the experiment or make it prolonged so that the healing experiment may be delayed unnecessarily.

In group improvisations, the experiments will have to be repeated again and again to generate coherence and to give expressions to the group atmosphere the development of relationships. Discussion in the group about musical experiences and recollections opens people's eyes to socio-cultural relationships, marginalizations, exclusion of participants from groups, information on emotional styles, climates and socialization processes group members have undergone, personal and social values in the group, resulting views of the world, patterns of experience, behaviour and our picture of ourselves. The most primary and therapeutic goal is to create a climate of coherence and openness, mutual esteem, mutual trust and tolerance. Joint discussions and sharing of musical experiences are extremely sensitive matters because in musical tastes and in matters of aesthetics people are very intolerant. It is very easy for people to devalue or exclude some people's tastes by considerations other than music and its aesthetics (especially by preferences, familiarity, taste, creed, etc). MLP allows us to experience a sense of community and solidarity, two values which are at present very ambivalent in an age of globalisation. MLP also deals with people's emotions to

political, commercial/economical ends. Every person has an innate quality of empathy, and an ability to build positive relationships, and creative, structuring capacities and ability to restructure and reshape problematic situation in one's life and in the society. Music discussions through MLP bring out these and make use of them for the goodness of society and for the person's own life also.

One can find my attempts to do these in my books, speeches and in my informal conversations with people interested in music and in relations with my acquaintances/clients both individually and as groups. Just as an example of the MLP of my biography, I will give a few of my experiences with music. And then I would proceed with my project on music therapy and how I use music as a key to my spirituality, through proper scientific background and philosophical acumen for doing so.

There are two types of artistic creation

1. Psychological
2. Visionary

Music is a visionary artistic creation not merely psychological. Strange visions emerge from the abyss of our memory, primordial experiences that passeth human understanding, sublime, pregnant with meanings arising from the timeless depths, a revelation whose heights and depths are beyond fathoming, as Jung puts it, a vision of beauty which we can never put into words.[30]

Lots of research, experiences, observations, analysis, aesthetic moments have been there in my sojourn through this book. But ultimate and the last word I would like to use is compassion, with no passion, anaesthesia with aesthetic beauty and peace for all, a *mahāadvaita* of East and West through music as the universal medium of communication.

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30 Jung, C. G. "*The Spirit of Man, Art and Literature*", translated by R. F. C. Hull, 105-111, London: Routledge, 2003.

3

Concept of a Medical University

Every third person in the world is in need of clean drinking water, or infected by the lepra/or tubercle bacilli. Every fourth child in the world is having diarrhoea or goitre. It is better not to speak of malnutrition and infectious diseases. Among the people dying of waterborne infections in the world, one-fourth reside in India, and among 16 million patients having tuberculosis 12.7 million are in India. Eighty per cent Indians residing in villages have only 20 per cent facility for hospital beds. The number of people affected by leukaemia, lymphoma, different types of cancer, HIV/AIDS, etc are increasing day by day. It is pointed out that among 100 persons we meet the probability is that one is an HIV+ve person. We need safe and most modern techniques in healthcare and safe blood supply and modern facilities in research programmes to combat this situation. We are happy to quote data to prove a point whether good or bad (as I have done just now). Keralites are proud to show their literacy rates, less infant mortality rates, and more life expectancy rates when compared to other states. But other states are also part of India, part of our world, our environment. Moreover, even in Kerala we don't have a good public healthcare system, and we don't have good health policy to combat the innumerable health problems we, as humans, face. There are a few private hospitals with modern facilities but they cannot trickle to the level of the common citizen below poverty line (since the cost of treatment is exorbitant). In this scenario, the need of a medical university to combat our healthcare needs become inevitable. There is a need

of unifying the healthcare system at the public and private sector on the basis of a broad outlook so that each and every person in the state gets healthcare facility, irrespective of caste, creed, economic status. For this, we need a medical university which can give expert opinion to the government in formulating a health policy, with a humanitarian and ethical touch, and at the same time providing efficient and modern technological support, a holistic approach to the field of medicine. This concept of a medical university helps the people have continuing education in maintaining health, both physical and mental, and to lead a fruitful whole life is new to India but is being practised in other parts of the world. We will have to formulate our own needs based on the prevalent diseases in our geographical area (geographic pathology based) and our resources to meet them. But we can also accept the good points from other medical universities the world over and modify them to suit our needs. The need for a medical university had been raised several times, and the last UDF government was trying to make a plan to fulfil the dream. One of the leading dailies in Malayalam (Madhyamam)[31] had approached me to give my ideas about it. At that juncture, I had been thinking of a dream medical university which I envisaged. It is the dreams and visions of people which take shape and become facts of history. Hence to have a private dream vocalized and made public is for the good of the nation and the world.

Institute of Human Values in Healthcare

In my dream medical university, there is an institute of human values in healthcare just like the one functioning in Medical University of South Carolina (MUSC).[32] Apart from the colleges

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31 *Madhyamam Daily*, July, 2001. Visions for a medical university for Kerala, Dr. Suvarna Nalapat.

32. Medical University of South Carolina (MUSC), Institute of Human Values in Healthcare.

and hospitals associated with it, the MUSC has a centre where health laws, bioethics, medical sociology, healthcare economics and medical humanity departments are functioning. In the Institute of Human Values in Healthcare after several discussions and seminars on health related matters and value judgements an opinion formulated, later becomes a health policy of the nation (not only of the university associated institutions). The creation of a sound health policy and legislation requires thoughtful consideration of human values reflected in such disciplines as philosophy, history, literature, spiritual traditions, social sciences as well as medical science and of course the law. Therefore, the academic faculty from different colleges and universities, professional communities are included in the panel of discussions and their opinions recorded and weighed before formulation of a health policy. The mission of the Institute is interdisciplinary research, publishing the analysed data of research related to human values and to develop a good health policy and legislation system of delivery of healthcare. The programme activity includes research and education programmes that address the medical, ethical and social issues related to healthcare services. MUSC also conducts Pitt's memorial lectures in medical ethics, legal/public policy initiatives, community based health programmes, and gives interdisciplinary fellowship programmes in healthcare to people outside the medical profession—like journalists, lawyers, philosophers, religious and social workers, historians, and other people with humanity studies who want to do social work in health field. The fellows get exposure to patient care, ethics consultation, and competence to write on ethical issues in medicare. Any person with basic education who wants to help in patient care gets an opportunity to help in the programmes after the fellowship, and the healthcare work is augmented by the contribution of scholars of different disciplines who get a fellowship. In the memorial lectures, any issue related to ethics and philosophy of health and health policy can be discussed. These discussions are made available to the public.

Dr Suvarna Nalapat

The teaching of the Holling's Cancer Centre in MUSC is that "you are more than the sum of your symptoms." They have a holistic approach to disease. There are many other cancer and geriatric centres where the statistics of disease is converted to success stories of cancer care. Many universities are devoting more attention to music and yoga therapy as part of a holistic approach to treatment and India is the country which should have started these programmes at a medical university level first, since in India, music, philosophy, yoga, ethics and mental/physical health were always inseparable from time immemorial. Since we are thinking about a medical university now, we can have an interdisciplinary approach and a holistic one under an Institute of Human Values in Healthcare. That will be a feather in the cap of any state in India, and therefore to Kerala with the proposed scheme of a medical university.

Nature of the university

Briefly, there should be an academic wing and one or more clinical wings attached to the university. The academic wing is the apex body dealing with research, continuing medical education, links with other departments/research institutions and all the modern technological facilities in basic sciences including immune fluorescence, hybridization, PCR, cell culture, electron microscopy, computerized 3D image analysis, molecular genetics lab, regional blood centre, medical television centre, interactive video conferencing, etc. should be attached to the university. All research facilities and knowhow to make revolutionary changes in curriculum modification, by introducing small group approach based on problem solving ability, preparation of special study modules for that purpose etc. Because of the highly sophisticated and technical knowledge in the academic apex body, the usual method of considering the oldest medical college in the state as the apex body will not be possible. Not only because of lack of technology and lack of funds with the government to give all facilities in a public sector

but considering the financial restraints of the state and of the nation as a whole, and the next best alternative is to find out and earmark the best healthcare institute with these facilities and request them to be the apex body of the academic wing of the medical university. It is ideal to have the institute of human values in healthcare attached to this academic apex body.

It would be ideal to have educational programmes like the DRINKWISE of the University of Michigan Health System.[33] for those who want to reduce or completely stop drinking. On similar lines, educational programmes for diabetics, people with high cholesterol, cardiac problems, digestive problems are possible. Educational material made by these foundations like extra corporeal support organizations and other study groups, facility for central data storing, regional blood centre, cord blood bank for marrow transplantation, geriatric care—there are innumerable areas in which the apex body can give advice. But, this is a holistic programme and not only the allopathic medical practices but the indigenous traditional branches of therapy (music, yoga,**Error! Bookmark not defined.** A*yurveda*, etc. which are specific for India) also are included in the national health policy scheme and hence the academic apex body cannot be from the allopathic branch alone.

Improvising research potentials in medical education

The major rule of a medical university is in improving medical education and the medical practice and research in the area. But the apex body is not directly involved in undergraduate education and conducting examinations and the routine jobs like that. Those should be done as before by the existing medical colleges and universities affiliated to them as of now. That does not come under the jurisdiction of the apex body of the medical university. The post-graduate examination will also be conducted in the usual medical college centres but with provision of

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[33] DRINKWISE of the University of Michigan Health System formulated according to the Ontorio Addiction Research Foundation's programmes.

technological research support from the academic medical university. The government can consult the apex body and discuss on how this should be channelised and formulated. The private hospitals and research centres can also negotiate support for their ongoing research programmes within the constraints of the decisions of the academic apex body.

New trends in medical education

The Hippocratus project from New York Medical Centre is a hypermedia instructional programme with an ultimate goal of transforming the institution into a knowledge syntitium. This programme will be available on the Net in the near future. A university, which can create its own educational hypermedia programme in Kerala, is not an impossibility with the rate at which the facilities are improving in the state.

The new trends in medicine are the incorporation of yoga, music and relaxing techniques into medicine. Music as a part of patients story, or musical life panorama is becoming part of narrative medicine. In several parts of the world, the music therapist visiting homes with mentally retarded/or geriatric demented clients is becoming part of family medicine. Another trend in modern medical education is to teach gendered medicine: approach incorporating medical ethics humanities, and healthcare systems and these trends are here to stay in India and its medical education system has to follow it soon[34].

India is a Third World country. We cannot forget the fact that a large number our people are starving and are below the poverty line without even nutritious food, clean water or a protective roof over them. Therefore, the most important thing to consider in prevention of diseases is to give good sanitary living conditions, nutritious food to the people and protect them from environmental pollutions of

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34 Indian Universities, Singh A.P, U. G.C, 1988.

various types. That is environmental[35] medicine, and environment is the *Maṇḍala* (see Fig *Maṇḍala* of health. An Integrative model of human ecosystem) in which we live. Conserve the economical resources for safe natural water supply, grow fruits and vegetables and become self sufficient, use only minimum toxic agents as manure, insecticides and use organic things for manure etc. are part of prevention of diseases. By spending money on these basic things, government can reduce diseases and thereby reduce the huge sums that are being spent on health, without any returns for the society. By diverting money to improved agriculture, improved rationing system based on the need, growing fruit trees instead of trees which give not even good wood, food and water resource protection, rainwater protection etc. many of our health problems can be prevented. The interdisciplinary approach to health and the institute of human values in healthcare gives more importance to discussions on such matters and formulates a health policy and implements it.

Governments will come and go. But a good health policy is for all to stay. Therefore, communal, caste, or political considerations should not be there in selecting the apex body and the members in it. The only criteria should be the humanitarian, value based, research oriented approach. If these are there, the apex body is earmarked. This is not an Utopian dream. This is a practical suggestion to be implemented as early as possible. And the core part of the curriculum for such an approach is music therapy, of the Indian type, incorporated into the holistic interdisciplinary programme.

The project aims at

1. Giving the best possible healthcare with a holistic approach to the entire population of Kerala and India at large.

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35 Environmental Medicine. Maṇḍala of Health: An Integrative Model of Human Ecosystem. Hancock and Perkins 1985. Quoted pp25 Culture and Health. A Critical Perspective Towards Global Health. sec Ed Malcolm Mac Cauliam. John Wiley and Sons Ltd.2006.

2. Incorporating the best research methods available.

3. Incorporating family medicine, narrative medicine, and client-oriented approach through music therapy incorporated into curriculum and medical practice.

4. Giving expert advice for basic public healthcare so that changing governments can make the best possible national health policy.

5. Helping cultivate a healthy mind, body, intellect and self to have physical, mental, intellectual and spiritual health.

6. Holistic approach to educational programmes. The new generation of doctors will have a proper understanding of human values and inter-and intrapersonal relationships. The students coming out of the educational institutions under the university will be the best in their profession, but also the best world citizens knowing the human values and practising them.

7. The project proposes combination of ideas from MUSC, other medical universities and various music therapy centres in the world, but the main thrust is to make use of Indian traditional classical music, which is *rāga* based, in music therapy and study the rich traditional methods of music therapy in combination and in comparison with the modern trends in medicine.

8. The traditional music and the western analytical, research methods are used in combination.

9. Combine science and art, east and west so that life becomes more fruitful and enjoyable.

10. The proposed human values in healthcare institute expects to do yeoman service in the fields of therapeutics, preventive medicine, family and rural medicine, narrative medicine, research, continuing medical education through the medium of music.

The units of healthcare system include:

1. Academic unit concerned with research, communication with other research oriented institutions and policy decisions, as described above.

2. The clinical unit concerned with patient care and treatment. Several hospitals/medical colleges/both Ayurvedic, allopathic, yoga and music institutes of government and private sector can get affiliation, provided they satisfy the criteria.

3. Institute of human values in healthcare continuing education and research in humanities attached to apex body, link art and science.

The project is based on small group approach to bring about revolutionary changes in the existing curriculum and in personal relationships. It is the health law and the health policy that determines the health of the nation as well as the nature of clinical practice and behaviour of doctors who are citizens of the nation. And health does not mean just physical health, it means physical, mental, intellectual and spiritual health. The duty of the doctor is not only to cure but to prevent diseases—including mental, intellectual and spiritual—of the clients. But who will cure these in a doctor? And who will make it clear to the authorities that the division of labour of a nation, of its professionals into engineers, doctors etc. is on a broad basis of citizenship and if they cannot contribute to the society (only to themselves), the nation has failed miserably. If Gandhi had remained a barrister with no interest in the welfare of the nation, we would not have had our *Rāṣṭrapitā*. If this fact is forgotten, we will never be able to solve our problems. Since the university proposed to take the policy from the institute of human values and its discussions acceptable to the apex body, these two bodies should be chosen very carefully not on political or seniority basis. National and international discussions on various topics have to be conducted by the apex body of the university and their discussions made available through journals, books, etc.

and the body of knowledge on the specified subject accumulated according to international standards. A publication department for this purpose alone should be there attached to the university.

A *gurukula* system to improve student-teacher relationship and parent-teacher relationship should be devised.

The patient no longer exists under a holistic set up. Instead, there is either a client or a citizen who needs help. A person is viewed as a whole, not as an organ or a case. Whole means, a person with a body, a mind, an intellect, and a spirit and problems related to all these, not just a body. For this universal approach of love and healthy relationships *Nādalayayoga* (*nādānusandhānayoga*) with Indian music is given by the university through both curricular and extracurricular activities. I would propose the university to have transparent functioning style since it concerns human values. There is nothing to hide from public for a person living a value-based life.

Medicine is the most humane of sciences, but is becoming more and more inhuman in recent times. Sir William Osler said that humanities are the hormones of life. The continued development of humanities will benefit our profession, our nation and ourselves. Adoption of a health village and associated activities for the medical students make them aware of the problems of rural India, and that will be of benefit to society. The *guru* and two or three students under him will be in charge of one or two families adopted. In the first year, the student is given time to adjust to the new environment and to imbibe the message of the institution and its aims through the various programmes. The mental state of the student is then prepared to take responsibility and challenges of a family being under his supervision, for family/rural medicine training. Only in the third semester does he get direct allotment of the family. Till then the family is under the *Guru* and the students learn the behavioural patterns and actions of the *Guru*. Along with hospital and medicine, the student gets the taste of the real problems that the

common man of India faces in day-to-day life. How a doctor should approach a person, how he should behave carefully and with love and understanding should be known to every doctor. Patient-doctor relationship also will improve with this approach.

What the youngsters need is not a pack of advices but a few role models who are good men and women and stimulate the good in them so that a new generation of unselfish citizens is there in the society, to safeguard it against erosion of values and health. When values are lost, health also is lost. Therefore, values are an integral part of medical education and till now this fact has been neglected in our studies.

The project which I envisage in *Rāgacikitsā*, presented here as a book, takes all these into consideration.

This music therapy project as part of human values in healthcare is a dream vision. A meta-cognitive[36] dream which I long cherished to be shared with all.

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[36] A metacognitive dream – spectrum of perspectives as dream and dreaming. The new neuropsychology of sleep. Implications for psychoanalysis. J.Allan Hobson, Ch 21 DREAMS, Ed Kelly Bulkeley.

4

A Curriculum for Music Therapy

Why? And on What Principles?

Criteria for a good curriculum[37] are:

1. The information essential for a living profession,
2. Inculcating valuable skills, and
3. Contribution to the spiritual and aesthetic development of the individual.

The concept of culture, education and curriculum has a logical geography of its own, yet it is difficult to define where one ends and the other begins. They merge as ripples on a pond. Academic performance of the student should be based on SQ3R, or survey, questioning, read, recite, review, etc. This is true not only of the subjects you learn but also of the life you live.

We have to do the following at the outset when we introduce a programme of music therapy,

1. establish criteria for educating music therapists,
2. for clinical training of them,
3. set standards of practice,
4. professional competency,
5. code of ethics,
6. a peer review system,
7. a judicial review system, and
8. an ethics board.

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37 (Pp124-125) The Philosophy of Education: An Introduction. Union ed. books 6. Harry Schoffield 11th impression.

The steps to be done for this purpose are:

1. A pilot project so that we can recommend to government on the feasibility of it.

2. Then plan a detailed syllabus and curriculum.

3. Examination and assessment system based on active involvement and dissertation and participatory activity, not on conventional lines. Originality, creativity and compassionate behaviour are to be valued more.

4. Conduct awareness programmes and workshops, and with help of all, including media, make the programme a success.

5. Textbook which is useful for the prospective students, teachers, clients, and musicians, to the nation builders and educationists has to be created. This book is the fifth step, after finishing the first four steps. Which establish criteria for educating a therapist, and for clinical training, setting standards of practice based on values and ethics, and professional competency, and with a vision for further projects and research on the subject so that it becomes an ongoing programme.

My programme spans to integrate social science[38] to medical sciences through music which is essentially anthropologically related to ethnomusicology, yet being universal since the ability to sing is species-specific for human beings. At the same time, the three levels of educational vision, planetary (cosmic), human (individual consciousness) and personal[39] (life descriptions) are included in the curriculum planning.

From a national perspective, Indian Universities Towards Nation Building[40] has given us very good criteria for

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[38] Lahlan, Malcolm, Mac, "*Culture and Health: A Critical Perspectives Towards Global Health*", Chichester, Joh, Wiley & Sons, 2006.

[39] Sullivan, Edmund "*Transformative Learning: Educational Vision for the 21st Century*". Toronto, University of Toronto Press, Zed Books, 1999.

[40] *Indian Universities: Towards Nation Building*. Ed. R.P. Singh. University Grant Commission, 1998.

vocationalization of education, for future welfare of society, and for environmental protection, antipollution and health measures, women empowerment and empowering minorities by educating them, and spreading the message of love, peace and nationality. All these factors are taken into account when the music therapy programme and curriculum are planned.

How much maturity and wisdom as well as professional excellence are there in persons who undertake a university course, and how much of these qualities make profit to the society/nation/world they live in terms of cost/benefit analysis, computing the gains of society with the investment the society made for that educational institution is a major factor to be looked into. How many of us have contributed to the society? In empowering the society with employment facilities, health facilities, child development, rural and urban developmental programmes, and how much we have reduced the stress of our nation? How much our programmes are useful to the entire sections of society?

Naturally, the project bloomed in my mind/consciousness as a panacea for all social evils and illnesses. This is intended as a creative problem solving for real life situations of society, fostering character development through value-based education, imparted musically for prevention and cure of disorders.

This is a collective responsibility of all of us, the citizens of India, the world citizens. Like the squirrel who contributed his little share to building the *Ramasethu*, I too am contributing my share through this project.

In ancient India, we had role model of a *Guru*. A model when graphic/solid conveys an idea visually. A mathematical/science model conveys an idea mathematically and aesthetically as in the *vāstu*. A poem or a theory conveys an idea through words. A live *Guru*, especially in music education, is a dynamic human model, a personal charisma, who conveys ideas by all the three methods, visually, mathematically, and in words and deeds, aesthetically, musically. Because music is mathematics, poetry, aesthetic *vāstu* of *nāda* and is spiritual.

Pursuit of knowledge is *vidya* and only one with concentration (*śraddhā*) can get it. *Śradhāvān labhate jñānam* (*Bhagavad Gītā*).[41] The value of listening/*śraddhā* is very much in educative processes. A good listener/disciple is as important as a good *Guru*/singer. Therefore, some aspects of listening are also included in the book.

Only if you touch the hearts of the future, teaching happens. When Gandhi[42] pointed out the seven sins of society, Swami Ranganathananda, my *Guru*, quoting them also showed how to solve them. I will call them the 10 *apaśrutis* of society and try to make them *śruti* through a compassionate language of music therapy.

If the education brings the following ten qualities to an individual we can say we are really educated. Otherwise, we are literate but not educated.

1. Listen, feel and hear with your heart.
2. Read and understand the great works of art, music, and have aesthetic enjoyment.
3. Write and say – express, communicate what you feel and how it relates to the ideas of the great works you come across.
4. Can talk to anyone, can ask thoughtful questions to them, so that thinking process is stimulated in them.
5. Seek truth forever.
6. Tolerance. Humbleness is not what I mean when I say simple living and high thinking are the best life styles. You should be simple at heart to be able to tolerate others, to listen to them.
7. Try to make the world a better place to live in.
8. Nurture and empower others with these qualities (disciples).

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41 *Śraddhāvān Labhate Jñānam. Bhagavad Gītā*, words of Śri Kṛṣṇa, the *Guru*, Arjuna, the disciple. Śloka 39. First line. Ch 4. *Jñānakarmasanyāsayoga*. Gītā Suvarnam, commentary on Gītā. Dr Suvarna Nalapat.

42 Changing Values for an Eternal Society. Swami Ranganathananda. Bhavan's Vidyabhavan, 1994.

9. Make connections with both the internal world (introspection, introversion) and the outside world (extroversion, viewing the world around) and make them in perfect balance like *Śivaśakti, yinyan.*

10. Experience the bliss of such an existence and be a bliss to the world.

I quote a famous sentence from my *Guru*, Swami Ranganathananda here:"Enlightened citizenship is not mere political adult citizenship."

Since we are having a programme in music therapy, here we must think of one defect that can occur to any listener, or to an entire nation because of listening without critical thinking. Repeated over a time, people are so used to the music that they loose the objectivity, what is familiar is accepted as correct, and what is new and unfamiliar is taken as incorrect because of this in India over a period of time. Consonance (*samvādi*), the passive sound that seems to be at rest alone is accepted and dissonance, the active unsettled sound is neglected (*vivadi*). Everyday conversation is *vivadi* (dissonance) which may create arguments and undesirable situations. But in music that term is used objectively to describe different kinds of harmony. Some dissonant combinations colour a tonal effect, soften a mood, add variety, sometimes even a sensuous quality to the sound which is very pleasing and very expressive. In Claudio Menterverdi's words, it is the second practice, style moderno, while the conventional is the style antico, first practice. (I have been listening to this type of music in my *Saṅgītaguru* Dr K. J. Yesudas for years and am indebted to my critical thought processes to his music). But only very few try this and get success in it, because it is more complex music and requires greater mastery over music. The importance of *Melakartarāga* and its mathematical precisions and cosmic, biologic significance are therefore elaborated in my book which deals with the ancient system. Example of critical thinking is, compare a melody you like and one you don't like or one you have not cared earlier. How do they differ? What is pleasing to you about one and displeasing with the other? How do some sound sad, and others happy? Why are some easy to memorise? Others difficult

even to recognize when you hear it again? A tune is a melody that is easy to recognize, memorise and sing, while a timbre is the quality of the sound (in Sanskrit the *varṇ.a susvara* or *suvarṇa*) called its colour. Both are important for touching the heart of listeners for several years. YUO or YUEH (see picture below)[43] is a Chinese word. The meaning is music but it has other meaning also.

Happiness, serenity joy, in an attractive association of ideas also read as *yuo or yueh*, meaning again music. And a Chinese Yu is the symbol of a crouching tiger (exactly like Nandi in Indian Temples of Śiva which is a percussion instrument. Music is something which has touched the hearts of generations of people all over the world and continues to do so and the best way for world peace and national integration is through musical medium Hence, the importance of music therapy programmes which I suggest and the incorporation of it into universities, including a medical university

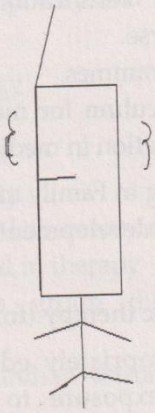

Fig 4.1 Yuo/Yueh of China.

43 pp 49, Attending a *Performance: In Music, the Art of History* by Jean [illegible] Arizona state uty, Mc Grawhill, 2003. 6th edition).

5

Institute of Human Values in Healthcare Under Amrita Vidyapeetham

(Deemed University)

1. Music therapy certification course and advanced certification course.
2. Fellowship programmes.
3. Innovative curriculum for medical students to promote valuebased education in medical professionals.

This includes training in Family medicine in *Amritagrama* as a practical field for overall development & *Sadbhavana* lectures and the curriculum for it.

1. Curriculum for Music therapy (for 5 year MBBS course)

Faculty should be appropriately educated in music therapy and with substantial exposure to clinical and laboratory medicine, or should be appropriately educated in classical music (a team of teachers with both the experiences will suffice). The training institution should provide and maintain appropriate academic and technological resources. It is better to have a team of people from the disciplines of music, laboratory, medicine, psychology, and clinical medicine as faculty. The faculty use of music therapy is emerging in four areas;

1. in clinical and laboratory medicine
2. in psychology
3. in special education, and
4. in research certification course

It is an entry level training. After the course one gets the name certified music therapist (CMT). The first generation of professional credential.

The student, after the course, should be able to design, utilize individual music experiences to assess, treat and evaluate patients. The objectives are specific and relevant to medical diagnosis, course of treatment and discharge timeline. Benefits are described in medical and not musical terms.

CURRICULUM AND SYLLABUS

Music in society-contemporary and ancient – pertaining to Region-India.

1. Music and psychology
2. Music and Yoga
3. *Melakarta rāga* system
4. Music and spirituality
5. Music and medicine-Laboratory and clinical-
6. Music as therapy and in therapy
7. Difference between group therapy and individual therapy
8. Indian Music and Indian astronomy-sound (*nāda*) and light (*jyoti*)

At the end of the course the student must be able to understand the following:

1. Current research relating to effect of music on various physiological systems of body
2. Understanding effect of *Rāga* on mood, psychological well-being, knowledge of theories relating to learning, memorizing etc.

3. Understanding how the nerve cell processes musical information

4. Knowledge of research processes and practice of carrying out a simple research process.

Assessment

1. Internal assessment 20%
2. Class participation 20%
3. Report of a simple research project in 3000 words 60%

(There is no written test or examination in the conventional sense).

Beyond entry level (Advanced postdoctoral leading to Phd/ACMT)

This is a second generation of professional credential. The student after the course, gets the postdoctoral degree PhD (ACMT). ACMT stands for advanced certified music therapist.

The objectives of the course would be to

1. Further the breadth and depth of entry level training and competency areas, advanced courses, seminars, and independent research potentials.

2. To select a patient population and study the needs and problems that affect them, help in emotional, psychological, physical, spiritual, sociological, and ethical problems with the help of a musical environment.

3. To study either an already established approach to music therapy or develop a new therapy approach.

4. To develop a theoretical framework and context for treatment, expand the ability to use music in the treatment approach, to make the student realize the impact of their own personality on the therapy processes.

5. Advanced competency in the level of qualified clinical research, advanced musical supervision, teaching and group leading (leadership skills).

6. Skills in conducting continuing education programmes for the public.

7. Continue and combine the clinical work, research and therapy, as art and science.

According to the world federation of music therapists (WFMT), a person appropriately educated in music therapy should have the ability to use music through systematic planning to provide opportunities for the following:

1. Anxiety and stress reduction.
2. Non-pharmacological management of pain and discomfort.
3. Positive changes in mood and emotional state.
4. Active and positive patient participation in treatment.
5. Decreased length of stay in hospital.
6. Emotional intimacy with patients and caregivers.
7. Relaxation for the entire family.
8. Meaningful time together in a positive creative way.

The intensive study programme as suggested by the WFMT consist of:

1. Musical skills and knowledge of the cultural and musical systems of the country concerned (in our case India).
2. Biological, psychological and social studies.
3. Music therapy knowledge and skills and methods.
4. Clinical training with supervised field experience.
5. General and specialized study in a particular programme.

The general programme of study shall cover:

i. Methods of music therapy.

ii. Application in various types of illnesses and patients with different settings.

iii. Different philosophical and theoretical orientations.

iv. Ethical principles.

v. Research methods.

vi. Existing models of music therapy practice.

The specialized programme of study forms one or more models of orientation. It promotes the student's personal growth and professional development.

The curriculum should include the following things:

1. Human behaviour and social environment and musical experiences.
2. Educational psychology.
3. Music philosophy.
4. Music psychology.
5. Music and yoga.
6. Music and spirituality.
7. Interdisciplinery research methods.
8. Role of laboratory medicine in alternative therapy with special reference to music therapy.
9. Musical acoustics.
10. Musical cultures of the world.
11. Sixteenth century classicism in Indian music.
12. *Bhakti* traditions in music.
13. Modernism in music therapy.
14. Women in music.
15. The brain and music experiences.
16. *Rāga* and the relation to astronomical proportions (mathematical).

17. Principles of *Ayurveda* (the alternative system of medicine in India, its relation to music therapy).
18. Music in the *Vedas*.

At the end of the course, the advanced skills expected of the student to develop are as follows:

1. Harmonization of melodies by sight and ear.
2. Atonal and tonal improvisations.
3. Directing group activities and understanding group dynamics.
4. Reportoire of age appropriate material suitable for therapy work.
5. Relaxation and guided imagery technique.
6. Composition of songs and group song writing.
7. Principles of *yoga* and *melakarta* scheme for music therapy application to different diseases.

2. Fellowship programmes

Interdisciplinary fellowship programmes under the Amrita Vidyapeetham in the model of MUSC (Medical University of South Carolina) Orientation.

The fellows will participate in a five day orientation programme each year (in January). Attendance is required. The fellows who actively participate in shaping the programmes, will meet together for small group discussions, interactive exercises, planned projects, presentations, expert consultations and planning sessions with the members and faculty of the institute. The contents of the programme will be developed collaboratively between fellows and the members of the institute, and will include the following:

1. Enhancing teaching effectiveness.
2. Leadership, negotiation and conflict resolution strategies.
3. Improving public advocacy and media relationship skills.
4. Programme evaluation and research methods (including methods of continuous quality improvement).

3. Innovative Curriculum for Medical Students

Broadly the curriculum should cover the following:

1. History of medicine including alternative medicine.
2. medical ethics.
3. Time management, personal management communication skills, leadership qualities including Indian ethos in management.
4. music therapy, *yoga*.
5. principles of *Ayurveda*.
6. Principles of human psychology and educational psychology (including Indian).
7. Rights and responsibilities of a good citizen.
8. Spirituality for the world.
9. Training in family medicine in the *amritagrama* as a practical field for overall development.

A. HISTORY OF MEDICINE

History of Indian medicines.
History of world medicines.
History of modern medicines.

B. MEDICAL ETHICS

Oath (Hippocratus and Susruta).
Qualities of a medical student.
Qualities of a physician.
Corruption in medicine –solution.
Methods of communication to the patient.
How to touch a person-patient
Euthanasia
Other current problems of relevance (as and when they arise).

C. TIME MANAGEMENT

Medicine and time
Personality development modern and ancient (compare) methods of study of medicine.
Concentration(*śraddhā*) and memory(*smṛīti*).
Observation, recording, and analysis of the observed data as research methodology in life and science.
Communication skills –verbal, nonverbal.
Leadership qualities
Modern trends in management.
Indian ethos in management (based on the *Gītā*).

D. MUSIC THERAPY AND NĀDALAYAYOGA FOR HEALTHY LIVING

Principles of yoga-the *ṣaḍcakra*.
The corresponding nerve plexuses associated with the *cakras* and the related organs.
Theory of *kuṇḍalini*, the bioenergy and the corresponding cosmic energy.
Goals of music therapy.
Music therapy in the west.
Music as a lifestyle.
South Indian classical music and *melakarta* scheme corresponding to *kundalini*.
Principles of music therapy in *Ayurveda*, yoga and *nādalayayoga*-comparison
Hypothesis
Psychology of music
Quest for the divine through *nāda*, spirituality of music.
Personality of Tyagaraja, Patanjali, Meera, Andal,
Vanuka from their literary works- a creative listening into their consciousness.
The trinity and the triumvirate.
Vanuka style and Tanjavur style.
Music to teach *advaita* philosophy to the common man.

Music lessons for the interested students, and training in music therapy (both group and individual therapy).

E. PRINCIPLES OF *AYURVEDA*

Tridoṣa
Herbal remedies
Naturopathy
Other medical systems –homoeopathy, unani, sidha
Surgery and pathology in India-*Suśruta Samhita* (compare with modern medicine).
Ṛitucarya and *dinacarya*

F. HUMAN PSYCHOLOGY EDUCATIONAL PSYCHOLOGY

Freud, Alder, Jung, Alport,
Skinner and his educational psychology.
Gestalt psychology.
Compare the psychology of the Indian seers.

G. A GOOD CITIZEN

Socrates
Manu
World citizen as envisaged by the ancients.
Duties and responsibilities
Śāntiparva–advice of Bhīṣma to king Yudhiṣṭhira – the responsibility of an administrator.
The *advaita* and *dvaita* in society.
Bhavadvaita vs *kriyadaita* for the peaceful coexistence.

H. SPIRITUALITY FOR THE WORLD

The *maha advaita* of science–astrophysics
Arrows of time
Trikālajñāna
Svapna and deep sleep
Dhyāna, samādhi, yoganidra and yogic visions.
Theory of *karma* and *punarjanma.*

Crossing all barriers — self-merging with the cosmic energy.
Buddhist bardo

Comparison of the four religions — Budhism, Christianity, Islam and Hinduism — the oneness of all religions.

Family medicine and Health village

Title of Project

Project of Adopting a Village as a "Model Health Village"

Infrastructure available at a superspeciality hospital, college of medicine, college of nursing, dental college, and a team of good workers for doing service devoted to the upliftment of people—physically, mentally, intellectually and spiritually

Description of the problem and its priority as perceived by the people

India is a country rich in its culture and its traditional ways of healthcare including the *Ayurveda*, yoga and music therapy. These are the ways of life to promote health and are preventive measures as well as curative. The villages in India at present lack proper healthcare and this is mainly due to lack of willing doctors to work in the villages, due to lack of proper watersupply, lack of nutritious food and the environmental pollution and lack of awareness. The aim of adoption of the health village is to improve overall physical, mental, intellectual and spiritual development of the community in which a holistic approach to health, including alternative medicine will be tried

Once the first health village becomes operational its model can be adopted by other governmental/non governmental institutions and more and more such villages can be set up so that the entire nation becomes a family of health villages

Action Plan

1. IDENTIFY THE AREA

Identify the first village to be adopted. I would suggest it to be in or around the vicinity of the Medical college itself. The area selected should contain at least 50% houses/families to be below the poverty line. In the initial stages, we can restrict the area to contain 50 to 100 families and later on expand.

2. HOUSING AND SANITATION

Each village should be given proper ventilated houses for those do not have it, with proper sanitation facilities. Those well to do members of the village having these facilities may be encouraged to help in this process.

3. KITCHEN GARDEN AND FRUIT TREES TO REDUCE NUTRITIONAL DEFICITS AND ANAEMIAS

There should be a kitchen garden with nutrient food grown by the house holders. We can provide free seeds for vegetables etc and encourage the family to grow them and become self sufficient. There should be a drumstick plant in all the compounds and the people should be told about the nutrients in each vegetable and fruit and help them to understand the importance of growing crops. India being an agricultural land, the importance of growing food by ourselves and making ourselves selfsufficient has to be emphasized. The other trees and plants also can be given free of cost or for a nominal affordable cost. All the nutrient fruits should be available in the village itself so that the children in the village can have them free of cost. At present we are depending upon the shops for getting the fruits. Many families cannot afford to buy fruits with their meager family income. Kerala is a fertle land and we can grow most of the fruit trees in our soil which will yield vitamins to the children in different seasons so that nutritional deficiencies and anaemias can be minimized. Moreover, the children will have a common place beneath the trees during the fruit seasons and they will enjoy the

sharing of food which will help them to have the habit of sharing with enjoyment which is essential to any democratic nation. It is the lack of this quality that is making them selfish and insensitive to the rights and feelings of others.

Selection of fruit trees and other nutritious vegetables etc. can be done with the help of community, medicine and dept. of nutrition (when coconut trees are given we can give the item which yield fruit within 3 years).

The water flowing out of the kitchen has to be used by recycling so that the watering of the plants and trees will not take additional water supply.

The kitchen garden will be looked after by each family. The common trees for the village will be looked after by the members on a rotation basis.

4. MANURE AND INSECTICIDES

The use of chemicals as manure and insecticides is leading to several health problems in our surroundings. Therefore, We should use organic manure and the rural ancient methods of insect control. The taste of the fruits and vegetables also will be better if we do that.

5. SMOKEFREE COOKING

The use of smokefree cooking is essential in the villages since the women of the houses spent most of their time in the kitchens cooking in an atmosphere of smoke. This leads to respiratory problems and their health fails within a short span and at an early age. The *Sasthrasahityaparishad* has some useful smokefree devices for the kitchen. Those families using conventional devices with smoke should be given these devices.

6. PURE WATERSUPPLY

This should be ensured so that several diseases can be prevented. At present we are facing a shortage of pure water supply. The

collection of rain water for use should be encouraged. Recently, a rain water project was launched in the Govt Maharaja's College premises which can be adopted for pure water supply to the inhabitants.

7. EMPLOYMENT HELP

Human beings need a roof to protect them, and good food and clean water for their health, sanitation to prevent diseases etc. To achieve all these at least one member of the family should have a good earning. Therefore, we must give employment facilities to at least one member of the family. If possible the entire family should be encouraged to take up small scale cottage industries as a group. Self-employment schemes are many and it can be decided after taking into account the abilities (educational, technical) of the individual as well as the willingness of the family members to work as a group.

Each year we will be taking in 100 medical students. They get only the experience of hospital based medicine. They become unaware of the common man's problems in the villages of India. This situation has to be changed. They should know what rural India is and what are the problems of the common man of India. I propose to allot each of the houses to a team of two students. They will act as family physicians to the family. They will develop a sense of compassion and concern for the problems of the common men and will know the pulse of the society and will become better persons and better doctors in turn. Since we have a *gurukulam* programme attached to our institution, the same house allotted to the student will be allotted to the respective *guru* as well so that a team of doctors will be there to look after the health problems of the village at a personal level. The *guru* and the student visits the house in regular intervals, the student records all the problems in a record sheet which will be evaluated from time to time. His level of understanding of the rural India and its problems will make him a useful citizen as well.

The team can give preliminary and basic training and information about the common ways of getting diseases and training in first aid so that the people themselves become confident of dealing with common emergency situations.

8. IMMUNISATION AND AWARENESS PROGRAMMES ON HEALTH RELATED TOPICS

The awareness programmes can be arranged from time to time to make the members of the village aware of healthcare.

The vaccination and immunization programmes can be arranged by our team of doctors. So that the people will get a comprehensive and personal healthcare.

9. ARTS AND SCIENCE

There should be a common reading room and library and books and periodicals which improve the mental, intellectual and spiritual acumen of the members should be carefully selected and kept in the library. There should be science related and art related activities for the members, both children and adults of all age groups. There should be lectures and seminars on various topics and the people should be encouraged to take active participation in all. They should be given a spirit of love and compassion to the entire world and humanity in general and to the country in particular. The need to have a sharing cooperative life without hatred to the fellow beings irrespective of caste or creed should be inculcated in the children from an early age. Cruelty, violence, fanaticism etc. should be prevented by strenuous efforts to educate the public how to love the fellow beings without any selfishness. The library, reading room, arts and science club can do these things by their activities. The use of arts, especially music, to bring people together should be utilized to the maximum. Common platforms should be arranged for sharing the various forms of knowledge so that people know each other and learn to love each other.

Those people who need care—the geriatric and the crippled, mentally retarded people, should be taken care of by the geriatric, and pain and palliative care departmentts. And the people of the village should be encouraged to help them too. So that the love and sharing comes not only from the institutions but also from within the society groups. A qualified psychologist and a team of dedicated voluntary workers can achieve this.

10. SPIRITUAL HELP

Spiritual help is not religious help. These are different. Spiritually all human beings are the same even though they are following different religions(or customs). The people should be encouraged to find out the inner spiritual strength dormant in them which makes them ready to take up any challenges and situations in life. The spiritual development is the development of personality and this will be useful not for a peaceful death but for a peaceful and fruitful living. This should be emphasized so that India achieve much more in the coming years.

A Pilot Project

Objective of the pilot study was to study the effects of Indian classical *rāga* music in reducing tension, anxiety, stress, blood pressure and alleviation of pai randomised trials are for controlling and minimizing errors and bias in research, especially in licensing of drugs in Australia and US and throughout the developed countries. They are maximum done in United States. There are 6 objections raised against them (Cook and Paine 2002). A non-randomized pilot programme is to look at the participants before and after the programme, to compare the participants with other groups of people who didn't take part in the programme. (Andrew Leigh, Agenda vol 10. No; 4, 2003 pge 341-354). Pilot programmes are good for advicing whether the policy will work out well. It can be done without using and wasting public fund (which is the only objection raised against it). There are quasi experiments called natural experiments

which are considered as better than the RCT. Qualitative research is very important and what the participants feel and how the project affect the participant's self-esteem is the most important impact of a policy intervention. Probability of including a qualitative aspect into RCT is also possible to improve it. The politicians have a polldrive policy and for them a result oriented policy making is important. Campbell collaboration reports that in US 9, 255 policy trials are done in contrast to 279 in Canada, 233 in UK, 69 in Australia, 52 in Netherlands, 24 in Japan, 23 in Sweden, 17 in Germany, 16 in spain, 8 in Newzealand, and 7 in France. From this we can guess how many authentic RCTs are done in India and other developing countries.

Moreover, the question to be asked is, Is music a drug to undergo a RCT like any other drug?

Randomised controlled studies have been done in clinical psychology from 17th century onwards. Since 1960 it is done in social sciences. Since 1970, this practice had flourished. For every randomised and omised policy trial, 24 randomised medical trials should be there ideally (Economist 2002).

For 10,000 people from a general population, half of them (5000) get a drug everyday for a minimum of 5 to 10 years and how then the system holds up, are there any side effects? If no side effects and the drug gives good results the drug trial RCT is said to be successful.

The pilot project is to decide whether one should recommend a particular method to be considered as a policy decision. In our project, the subjective factor is the feedback (written) from 31 volunteers:

1. Nice feel.
2. Feels sleepy.
3. Wants to hear daily. Comforting effect.
4. Soothing effects, relaxes mind.

5. Pleasant, refreshing. A good start for the day.

6. Quick sleep. Relieves insomnia, reduce stress *manaḥśāntī.*

7. Gives sleep without disturbance. I had insomnia before. Soothing, I am getting addicted to it.

8. Well being, sleep and happiness.

9. I am getting into a meditative mood with it.

10. Melodious, soothing. I wonder whether I can see her in person. It is a great experience with her voice.

11. I enjoyed the session, and fell into sleep.

12. Extremely pleasant experience. I was in a special state, neither sleepy, nor awake. It was melodious.

13. *Ārdrasundaram, śāntamadhuram, daivikam.*

14. Relaxing. I want to hear the CD more than twice a day.

15. All the songs are soothing. I gradually fell asleep.

16. Sessions were refreshing. I was carried away to a different world. Voice was soothing.

17. Sessions were really good, 1000/1000 marks, refreshing. I was consciously trying to build some tension building thoughts but that did not work out. I could experience a cool breeze caressing my mind and then I started sleeping. But one thing surprised me is that I was listening to each song while sleeping also!!!. It was a beautiful experience. Sound has a soothing effect. Relaxed feeling.

18. Beautiful soothing voice, excellent selections. I feel soothed and relaxed. Happy feeling in me, I am relaxed. Beautiful divine voice.

19. Soothing music. Improves the state of mind.

20. Very interesting. Sleeping mood.

21. Soothing, comforting effect. Able to relax and concentrate my mind.

22. Very fantastic and melodious. During the first two songs I fell asleep (for some seconds). Then I felt that I am in a flying state. Those 45 minutes were very precious and my mind was in a calm free state. I felt that freedom even when I woke up from it.

23. A pleasant feeling. Full of joy. In those moments I was not feeling that I am a patient with symptoms of Parkinsonism.

24. With songs of *Guruvāyūrappan* I had a pleasant feeling in body and mind.

25. Firstly, how should I thank you for making me relaxed, happy, away from a busy life. I was relaxed, forgot that I am tired. It put me off to sleep. I could see the beloved *Guruvāyurappan*. *Harivarāsanam* made me devotional, a very pleasant blank mind without any thought. I was fast asleep.

26. Really marvellous, mind soothing effect.

27. I had high BP for several days and I had been taking medicines for a long period but I have a normal basic level of 120/80 only now with this music therapy.

28. My pain has disappeared and the cassette is heard by my father who had a laryngectomy for larynx and he is relaxed with good sleep and his quality of lfe improved. My mother-in-law with diabetes also feel the same good feeling. Now all of us hear the music daily and it had transformed our life.

29. The music is divine. All tensions relieved and I feel calm and quiet and happy.

30. I feel a change in my personality. I have never allowed my wife to sing at home after our marriage. Now I allow her to do that and I feel a definite change in our life. I am able to communicate my feelings better with this.

31. Smoothening, relaxing, peaceful and calm voice. I am very very happy and free of tensions.

The objective factor

The BP and respiratory rate and pulse rate before, after 15 minutes of playing music and after the test was recorded and the Hamilton's anxiety score and pain score recorded (very very significant positive results are observed in the reduction of Blood Pressure with an initial high Blood Pressure, and in the HARS anxiety scale). This shows that the modifiable risk factors of coronary heart disease can be significantly modified and this can be used both for prevention and cure of the disease. The results were analysed statistically and the results are shown below.

Descriptive factor

Table 5.1

Descriptive Statics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Baseline systolic BP	30	80	90	170	119.87	16.708
During therapy systolic BP	26	60	80	140	110.62	13.276
Baseline Dystolic BP	30	50	50	100	77.67	11.943
During therapy Dystolic BP	26	30	60	90	73.08	7.359
Baseline pulse rate	27	54	56	110	76.59	13.494
After therapy pulse rate	16	34	56	90	71.00	7.554
Anxiety scale-before	16	31	1	32	14.75	8.071
Anxiety scale-after	16	28	0	28	7.69	7.998
Valid N (list wise)	10					

T-Test

Table 5.2
Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Baseline systolic BP	118.69	26	17.148	3.363
	During therapy systolic BP	110.62	26	13.276	2.604
Pair 2	Baseline Dystolic BP	76.54	26	12.310	2.414
	During therapy Dystolic BP	73.08	26	7.359	1.443
Pair 3	Baseline pulse rate	75.63	16	11.366	2.841
	After therapy pulse rate	71.00	16	7.554	1.889

Table 5.3
Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Baseline systolic Bp & During therapy systolic BP	26	.681	.000
Pair 2	Baseline Dystolic Bp & During therapy Dystolic BP	26	.299	.138
Pair 3	Baseline pulse rate & After therapy pulse rate	16	.610	.012

Table 5.4
Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Baseline systolic BP- During therapy systolic BP	8.08	12.655	2.482	2.97	13.19	3.254	25	.003

Pair 2	Baseline Dystolic BP—During therapy Dystolic BP	3.46	12.310	2.414	-1.51	8.43	1.434	25	.164
Pair 3	Baseline pulse rate-After therapy pulse rate	4.63	9.025	2.256	-.18	9.43	2.050	15	.058

This is the result for all 31 cases.

In the above results, Systolic BP samples are differing significantly.

Pulse rate results, which cannot be concluded but recommended, because the p-value is exact 0.05

NP Tests Wilcoxon Signed Ranks Test

Table 5.5
Ranks

	N	Mean Rank	Sum of Ranks
POST_SYS-BAS_SYS Negative Ranks	6[a]	4.25	25.50
Positive Ranks	1[b]	2.50	2.50
Ties	0[c]		
Total	7		
POST_DYS-BAS_DYS Negative Ranks	4[d]	2.75	11.00
Positive Ranks	1[e]	4.00	4.00
Ties	2[f]		
Total	7		

a. POST_SYS<BAS_SYS
b. POST_SYS>BAS_SYS
c. BAS_SYS=POST_SYS
d. POST_DYS<BAS_DYS
e. POST_DYS>BAS_DYS
f. BAS_SYS=POST_DYS

Table 5.6

Test Statistics[b]

	POST_SYS-BAS_SYS	POST_DYS-BAS_DYS
Z	-1.980[a]	-.962[a]
Asymp. Sig. (2-tailed)	.048	0336

a. Based on positive ranks.
b. Wilcoxon Signed Ranks Test

This analysis is for 10 cases than High 10 cases. Systolic BP samples are differing significantly.

NPar Tests

Wilcoxon Signed Ranks Test

Ranks

	N	Mean Rank	Sum of Ranks
Anxiety scale- after- Negative Ranks	13[a]	8.50	110.50
Anxiety scale- before Positive Ranks	2[b]	4.75	9.50
Ties	0[c]		
Total	15		

a. Anxiety scale-after<Anxiety scale-before
b. Anxiety scale-after>Anxiety scalr-before
c. Anxiety scale-before=Anxiety scale-after

Test Statistics[b]

	Anxiety scale -after- Anxiety scale -befor
Z	-2.872[a]
Asymp. Sig. (2-tailed)	.004

a. Based on positive ranks.
b. Wilcoxon Signed Ranks Test

Anxiety scales are differing significantly. NPar Tests

Table 5.7

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
BAS_SYS	10	137.00	13.375	130	170
BAS-DYS	10	87.00	11.595	60	100
DIFF-BAS	10	50.00	11.547	40	70
DT-SYS	7	121.43	14.639	100	140
DT-DYS	7	80.00	10.000	60	90
DIFF-DT	7	41.43	6.901	30	50

Wilcoxon Signed Ranks Test

Table 5.8

Ranks

	N	Means Rank	Sum of Ranks
DT_SYS-BAS_SYS Negative Ranks	6[a]	4.25	25.50
Positive Ranks	1[b]	2.50	2.50
Ties	0[c]		
Total	7		
DT_DYS-BAS_DYS Negative Ranks	4[d]	2.75	11.00
Positive Ranks	1[e]	4.00	4.00
Ties	2[f]		
Total	7		
DIFF_DT-DIFF_BAS Negative Ranks	5[g]	3.70	18.50
Positive Ranks	1[h]	2.50	2.50
Ties	1[i]		
Total	7		

a. DT_SYS<BAS_SYS
b. DT_SYS>BAS_SYS
c. BAS_SYS=DT_SYS
d. DT_DYS<BAS-DYS
e. DT_DYS>BAS_DYS

f. BAS_DYS=DT_DYS
g. DIFF_DT<DIFF_BAS
h. DIFF_DT>DIFF_BAS
i. DIFF_BAS=DIFF_DT

Table 5.9

Test Statistics[b]

	DT_SYS-BAS_SYS	DT_DYS-BAS_DYS	DIFF_DT-DIFF_BAS
Z	-1.980[a]	-.962[a]	-1.725[a]
Asymp. Sig. (2-tailed)	.048	.336	.084

a. Based on positive ranks.
b. Wilcoxon Signed Ranks Test

NP ar Tests

Table 5.10

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
BAS_SYS	10	137.00	13.375	130	170
BAS_DYS	10	87.00	11.595	60	100
DIFF_BAS	10	50.00	11.547	40	70
POST_SYS	7	119.14	6.094	106	124
POST_DYS	7	75.71	7.868	60	80
DIFF-POS	7	43.43	7.807	30	60

Wilcoxon Signed Ranks Test

Table 5.11

Ranks

	N	Mean Rank	Sum of Rank
POST_SYS-BAS_SYS Negative Ranks	7[a]	4.00	28.00
Positive Ranks	0[b]	.00	.00
Ties	0c		
Total	7		
POST_DYS-BAS_DYS Negative Ranks	5[d]	3.00	15.00

Positive Ranks	0[e]	.00	.00
Ties	2[f]		
Total	7		
DIFF_POS-DIFF_BAS Negative Ranks	6[g]	4.42	26.52
Positive Ranks	1[h]	1.50	1.50
Ties	0[i]		
Total	7		

a. POST_SYS<BAS_SYS
b. POST_SYS>BAS_SYS
c. BAS_SYS=POST_SYS
d. POST_DYS<BAS_DYS
e. POST_DYS>BAS-DYS
f. BAS_DYS=POST_DYS
g. DIFF_POS<DIFF-BAS
h. DIFF_POS>DIFF_BAS
i. DIFF_BAS=DIFF_POS

Table 5.12

Test Statistics[b]

	POST_SYS-BAS_SYS	POST_DYS-BAS_DYS	DIFF_POS-DIFF_BAS
Z	-2.371[a]	-2.070[a]	-2.132[a]
Asymp. Sig. (2-tailed)	.018	.038	.033

a. Based on positive ranks.
b. Wilcoxon Signed Ranks Test

Note:

The analysis was done by using software called Statistical Packages for Social Sciences (SPSS) by Ms Sumithra, Amrita Institute of Medical Sciences.

Music Therapy Project for Cardiology Departments

Music therapy is used as a pacemaker to achieve rhythms in two study groups, one by Hans in 1980 and another by Bason in 1992. This reduce anxiety due to various causes in patients. In 1994, Dr

Karen Allen and Jim Blascowih proved that music in an operation theatre can reduce the surgical complications. It lessens pain and shortens the hospital stay.

In Duke Heart Centre, support programmes in music therapy is used both for physical and psychological well-being of the patients. According to the experience in that centre, it eases the impact of hospitalization and that of uncomfortable experiences, patients express their feelings more and there is an increase in self-esteem so that the quality of life is enhanced. It decreases heart rate, respiratory rate, blood pressure, etc. In many centres, music played in the ICU, during treadmill and during the hospital stay, and at home with the caretakers are documented to have good results.

THE PROGRAMME

1. Patients belonging to any sex or age group can be taken. For research programmes, a total of minimum 30 with a few controls needed.
2. Measurement of the following parameters.
3. Breath frequency(bf).
4. Heart frequency.
5. Systolic and diastolic blood pressure.
6. Mean arterial pressure.
7. Pulse pressure (Korotkov method).
8. Minute volume of blood circulation index of vegetative equivalence according to the Hildenbraught and vegetative index according to Kerdo.
9. All the measurements should be at the basal level, during music, after music and after a specified time of taking the treatment.
10. The same can be done in patients doing treadmill and results recorded.

11. Score of Hamilton's anxiety index scale.
12. Pain score.
13. Score of stress as used in the German academy of scientific music therapy.
14. Music can be given to patients undergoing cardiac surgery and results recorded.

The type of music given should be classical, devotional and melodious based on the 72 *Melakarta janaka rāgas* and if needed their *janyarāga*s. The selection of music for each individual has to be done by the music therapist based on an informal talk and a questionnaire assessing the musical background, preferences, the disease affecting the organ systems, the *cakra* affected and the birthstar (the bio and cosmic energy field). More than one *rāga* can be given common and familiar *rāga*s for group therapy, for general wards etc. as recreational but specific for each individual (*melakarta*) as treatment.

When we give music the effects of it on the autonomous innervation of the cerebral arteries, can be studied with slow spontaneous oscillations (SSO) of cerebral blood flow with transcranial Doppler ultrasound (TCD). TCD notices SSO waves 3-9 cycles per minute (M wave) and 5 -2 cycles/mt (B waves). The SSO is caused by rhythmic diameter changes of the medium and small arteries. Patients aged between 24-65 suffering from tension and headaches can be treated with music.

After fast fourier transformation 4 groups of peaks on the SSO Spectra divided into 4 rhythms.

A. 0.01-0.02 HZ
B. 0.02-0.033 HZ
C. 0.06-0.O9 HZ
D. 0.091-0.15 HZ and

An intermediate diapason of 0.034-0.059 HZ.

In contrast to the A, B, D rhythms, the reduction of peaks in the diapas C was statistically significant (31.60%.P=0.04 ci-95%) during listening to music. Patients get relief of headache while and after music treatment. SSO may represent an equilibrium in autonomous innervation of the cerebral arteries. Music affects the functioning of the brain structures concerning autonomous nervous system and works as a non-chemical sympatholytic (Ref. Harmonising autonomous innervation of cerebral arteries. Alexel V. Shemagonov. M. D. & Valentina. N. Sidorenko. MD. PhD. Belorussian State Medical Institute of Postgraduate Education & Mother and Child Health Institute of the Ministry of health. Orlowskaya st, 66. Minsk 220000 Belarus AAR International Edition 2000 Scientific Music therapy).

6

Curriculum for Short-Term Courses

Dear Bhuvaneswary,

You have to decide and determine the following questions before you write out the project. That is the best way to plan an educational programme not only for the music therapy project but also for any course.

Consider this letter as part of my faculty training programme which I have been doing with you for a long period, in a stepwise manner, slowly and steadily. Actually, you are the first faculty member I have trained in this respect, with my scheme and I hope you will do this and get the due respect for the involvement you have shown in the project for almost 6 to 7 years *(and I appreciate your dedication to the purpose and congratulate you for it).

1. Decide how many students you are going to enrol.
2. How many hours will you get for the entire course?
3. The eligibility of the students to be enrolled and their selection.
4. The eligibility of the faculty to train them (only if the faculty is eligible they can plan a syllabus and curriculum as you know well).
5. What do you expect the students to have achieved at the end of the 6 month period?
6. What are the prospects of having entered into such a course?

7. How do you plan the syllabus and curriculum?

8. How do you assess the students at the end of the 6 months period?

9. How do you assess the patient and the success of your programme?

10. Have the course got any expansion/or a higher second generation course leading to doctorate?

11. If so, have you got any concrete plan for that?

12. Give details of these.

13. What infrastructure you need from the institution—the training institute/the clinical institute where the project is carried out etc. depending upon the project?

14. What will be the approximate cost for the infrastructure?

15. What will be the recurrent expenditure for carrying out the programme every year?

16. Does the training institution expect any financial benefit?

17. If so, what fee structure they are planning to get from candidates and so on.

Maharaja's College – Music Therapy

(6 months certified course plan)

Dr Suvarna Nalapat

1. Number of students to be enrolled (suppose) 25.

2. How many hours will you get for the entire course? 72 hours in 6 months (suppose).

3. The eligibility of the students to be enrolled and their selection—Graduate from a college or a university with degree or postdoctoral degree in either music/or medicine, a caretaker with a degree in nursing, or in clinical psychology and music therapy can also apply for a certification course.

Dr Suvarna Nalapat

Since this is a course based on practical knowledge and involvement in the social cause, the possibility of including the people who are accomplished musicians and who have no accepted degree is considered. They can be given short fellowship courses of one week duration and their valuable opinions should be counted (they are not called CMT but as fellows of the music therapy group, and can serve in day care centre or the child development centres on a voluntary basis, and help in promoting the cause, but since they have not done the projects and research protocols they will not be able to work in a hospital set up or a research oriented institution. Other professionals and music lovers should also be given awareness courses and for this one day seminars/workshops and fellowship programmes conducted by the department should be open to such people too. This will enrich the department and the student repertoire and the society. The involvement in the subject, and a taste for the discipline of music are mandatory for selection (not the mere degree).

4. The eligibility of the faculty to train them (only if the faculty is eligible they can plan a syllabus and curriculum).

Faculty should be appropriately educated with substantial exposure to clinical and laboratory medicine and/or music. A team of faculty members with both the experiences would suffice. The training institution should provide the academic and technical resources. The faculty members should be interested in research, education, educational psychology and should be socially motivated.

5. What do you expect the students to have achieved at the end of the 6 month period?

The course is designed with specific methods and uses music activities in a medical setting, complying with the expectations and requirements inherent in the medical models of treatment. The student after the course should be able to design, utilize individual music experiences to assess, treat, and evaluate

patients. The objectives are specific and relevant to medical diagnosis, course of treatment and discharge timeline. Benefits are described in medical terms, not in musical terms.

The students should be able to understand current research methods in music therapy, and the effect of music on various physiological systems of body, the effect of music on moods, psychological well-being, knowledge of theories relating to learning and memory and how music is emerging as a tool in the areas of clinical and laboratory medicine, psychology and psychiatry special education in research.

6. What are the prospects of having entered into such a course?

When music therapy is recognized as a tool in therapeutic and preventive medicine, in narrative medicine which is part of a patient-centred approach, the job prospects are tremendous, both in India and abroad, and the students will be benefited by that. Even otherwise, the satisfaction and humanitarian aspects of having given solace to the suffering soul are there and that itself is an attraction to this noble cause.

7. How do you plan the syllabus and curriculum?

Curriculum and Syllabus Certification Course (Entry level training).

72 hours (6 months).

After the course, the candidate gets the name "Certified Music Therapist" (CMT).

Basic lectures

1. In India: Class I.
2. History of music therapy in India
3. in Ayurveda, and in Veda.
4. in yoga
5. in South and North India

5. Time oriented approach and *Rāga* oriented approaches

6. Other–folk/tribal/poetic traditions/*bhajan* as group therapy.

B. In the West evolution, current status and research (1)

Transcultural aspects in the Asia-Pacific and the West (1)

In medicine and as medicine–various situations where it is used (1).

2. Psychology of music. The body/mind complex archetype. Its functions in society, effects on ethnic populations/individual minds(1)

What is Mozart effect? Rāma-Tyāgarāja effect, Kṛṣṇa-Meera effect, Devi-Deeksitar/Śyāmasāstri effect, Padmanābha-Swathy effect and so on in musical traditions of India with relation to ethnomusicology, anthropology, archetype and history (2).

How this is made use of in therapy and as therapy in India? Is this religion or spirituality? How to distinguish these two terms? (1 group discussion).

Effect of other types of music (film/light/folk/gazal/poetry (group discussion).

3. *Melakarta rāga*

In yoga and astronomy

How it correlates with cosmic and bioenergy fields, mathematical and bioenergy cycles of using it as the base, (2 classes).

(Basic lecture 14+group discussions 2). Have a seminar and workshop on related subjects after the basic lecture topics are completed and in it people from outside the faculty members should participate so that students get a chance to interchange views/share their views (so that a total of 16 hours +a seminar and workshop comprising 2 days is over).

4. The Project

This is the most important part of the course. The lectures and the discussions will be more specific and project related and will involve more individual discussions with the guide and the student (depending upon the project chosen).

The basic lectures in this project should include:

The accepted research methods and protocols/ethics to be followed while doing a therapeutic project (2 hours).

How to carry out a simple research project and write a scientific article (self study+discussion).

How does a nerve cell process musical information (1).

Brain research and music therapy (1).

Endocrine cells and their role/immunological functions, neuropsycho immunology (1).

The laboratory parameters measured in various projects and already proven – the current research available and the effect of music on various physiological systems of the body (1).

Ethics to be followed in a patient related/humanitarian approach (1).

Table 6.1

Lectures basic for research

Total hrs/6 months	Lectures	Group discussions	Seminar	Workshop	Project	Individual discussions/students/guides
72	21	2	1(3hrs)	1 day (6 hrs)	40 hrs	As and when necessary (planned by guide and student)

7. How do you assess the student at the end of the 6 months period?

Internal assessment 20%

Class participation 20%

Report of a simple research project in 3000 words 60%

There is no need to have a written examination and this is a practical/practice-oriented course, not a written one.

8. How do you assess the patient and the success of your programme?

This is individual based project and can be discussed only at the end of the project by each candidate (depending upon the results obtained).

9. Have the course got any expansion/or a higher second generation course leading to doctorate?

Yes. The detailed course is already planned and being experimented (by Dr Suvarna Nalapat).

10. If so, have you got any concrete plan for that?

(Yes.*which can be discussed later)

11. Give details of these.

(Not necessary at the present juncture, since you are just starting the first step. The plan will be given in entirety when discussions for it come up).

12. What infrastructure you need from the institution—the training institute/the clinical institute where the project is carried out etc. (depending upon the project).

13. What will be the approximate cost for the infrastructure?

The appropriate rooms and institutions for therapy, and the books, CDs, cassettes needed and good sound system etc., the TA/DA of the externals, the stationery and the computer/laptop also may be included.

The project will cost some initial amount but it may vary depending upon the project chosen.

(Will be discussed later after knowing the funds available for the purpose. To be realistic, we can minimize or maximize our project and our development plans depending upon the funds available and the hospitals willing to do the clinical projects available). If infrastructure is already available in the chosen institution, the cost of a project will be negligible which makes it cost effective.

14. What will be the recurrent expenditure for carrying out the programme every year?

The salary of staff, and the updating of information and library facilities, money for periodic seminars, workshops, and for the project works has to be thought about and planned in detail. If the teaching institutions/or the hospitals can meet it themselves it would be ideal, and if not, we will have to think of alternate methods or ways.

15. Does the training institution expect any financial benefit? If so, in what way? (This you have to enquire and make sure).

7

Emotion in Music Therapy and Listening Activities

Self analysis in music and in consciousness is different from psychology. Study of consciousness after the initial stages becomes self-consciously scientific. Psychology is only one of the manifestations of a person's consciousness about which the person may or may not be conscious. By scientific, I mean that the study of consciousness[44,45] is a subject matter which the mind approaches

1. as empirically, quantifically, experimentally as possible,
2. as evolutionary phenomenon,
3. developmentally as a function of maturing organism, and
4. as entity capable of being, mapped back to neural activity and brain states.

It is as scientific as the study of energy,[46] and a 3D model of consciousness similar to a virion[47] is possible. The experimental

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44 Blackmore, Susan J, "*Conversations on Consciousness: What the best Minds Think about the Brain, Free Will and What It Means to be Human*. New York. Oxford University Press, 2006.

45 Lockwood, Michael, *Mind, Brain and Quantam: The Compound 'I'*. Oxford: B. Blackwell, 1990.

46 Paṇḍā, Nṛsiṃhacaraṇa, '*The Vibrating Univesse*.' Delhi: Motilal Banarsidass Publishess, 1995.

model of Godell[48] Michelson Morley[49] theorem is the most effective way of educating the genius design, publicity media. Gestalt thought consciousness of a genius can even move matter[50], which is true. Consciousness is aware of itself, is species specific for man, and as reflective nature intensify human values and culture, enrich humanity.

Awareness is a focused attentive form of consciousness. Most of the time mind is unfocused in human beings (*samkalpa/vikalpa* of Patañjali).[51]

When I say my mind is concentrated on music, my consciousness is concentrated both in a temporal sense and qualitative sense. Attention (*śraddhā*) or concentration happens as a focusing which can be involuntary (sleep, musical *laya*) or deliberate. Musical *laya* can be either involuntary or voluntary. Both can happen. According to theories of Roger Penrose,[52] the organ of consciousness is in atomic resonance at micro tubular dimensions and certain frequencies are energies of certain consciousness. Electrochemical energy of nervous system transferred to consciousness energy and nervous system creates patterns of energy and this creation of patterns of energy is possible because individual brain is only a component of a larger creative mind, the universal energy, which believers can call God,

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47 The ancients knew about it. *The Hindu*. Open page, Feb 8. 1980, Dr Narayana Nalapat (Virion as icosahedral symmetry).

48 Godell's theorem. Infinity and the Mind. Rudy Rucker.

49 ...the speed of light. (Michelson Morley experiment Ch. 4, pp 33-43) ...Venkataraman. *Vignettes in Physics*. Universities Press, 1997.

50 Gestalt. pp 649-650 *Introduction to Psychology*. Norman L. Munn, L. ...Fernald, Peter S.Fernald, ED Leonard Charmichael. Oxford &IBH

51 ...Patañjalayoga, Swami Prabhavananda, *Patañjali Yogāstras*, Sri ...Ramakrishna Math. Madras. 1994.

52 ...Penrose, Roger. *"The Emperor's New Mind: Concering Computers, Minds and the Laws of Physics."* London: Vintage, 1990.

and non-believers can call universal energy. Science is not a fixed truth system, it evolves, changes. Science of consciousness is not a mere illusion of the present or current science, but it critically changes our perception of what science is. How is a specific or general model of verbal consciousness generated, constructed? By making things happen and by dreams coming true. A theory is awakened in our consciousness, established as science, to be approached in an organized way, comparable to a human genome project. A musical form or an art form is a musical consciousness that is visualized (*paśyanti*) in the creator's mind, thought upon or analysed (*madhyama*) into an orderly form, and brought out (*vaikhari*)[53] or communicated to others, making a dream *rāga* come true. For this to happen, *śraddhā*, bhakti (concentration, devotion) and *śruti* (listening) are needed.

To think of musical mind of mine and to analyse that the background literature which came to my aid are

1. Indian

Prasthānatraya (*Bhagavad Gītā*,[54] *Upaniṣads*,[55] *Brahmasūtra*,[56])

Tantra (*Sāradatilaka* of Rāghavabhaṭṭa)

Mantraśāsthra[57]

Indian aesthetics[58]

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53 John George Woodroffe, Sir. "*The Garland of Letters (Varṇamālā): Studies in the Mantra Shāstra.*" Madras: Ganesh, 1922.

54 *Bhagavad Gītā Bhāṣyam Souvarnam*, Dr. Suvarna Nalapat. Kurukshethraprakasan. 1.5.2001.

55 *Sudhasindhu Study of 12 Major Upaniṣads* D.C.Books, Kottayam 2008. By Suvarna Nalapat.

56 Nālapāṭ, Suvarṇa, *Brahmasindhu, Brahmasūtram, Svādhyayam*, Kottayam: D.C.Books, 2006.

57 Tarlekar, Ganesh Hari. *The sāman chants: A review of research*. Bombay: Indian Musicological Society, 1985.

Indian astronomy and mathematics

Language/literature—Sanskrit, Malayalam and Tamil.

Visual medium—the Malayalam, Hindi and Tamil music.

2. Western sciences

Carl Gustav Jung [59, 60]
Roger Penrose[61]
Kant[62] and Wittgenstein[63]
Francis Crick,[64] (Biologist) and his DNA structure analysis
Albert Einstein[65]
Stephan Hawking[66]
Medical training as pathologist.
English language and literature.

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58 *Indian Aesthetics: Acoustical Perspective on Rāgarasa Theory*. Swarnalata Rao. Munshiram Manoharlal, 2000.

59 Jung, C.G, and Anthony Storr. *Jung: Selected Writings*. London, Fontana Press, 1986.

60 Jung and Kerneyi. *The Science of Mythology: Essay on the Myth of the Divine Child and the Mysteries of Eluesis*. Translated by R. F. C. Hull, London: Routledge, 2002.

61 Roger Penrose, *Shadows of the Mind*, Vintage, 1995.

62 Immanuel Kant. The Story of Philosophy, the Lives and Opinions of the Greater Philosophers by Will Durant, ch 6. Pp253-282. Also, Diaries of Nalapat Narayanamenon & History of Western Philosophy, Wilkipedia.

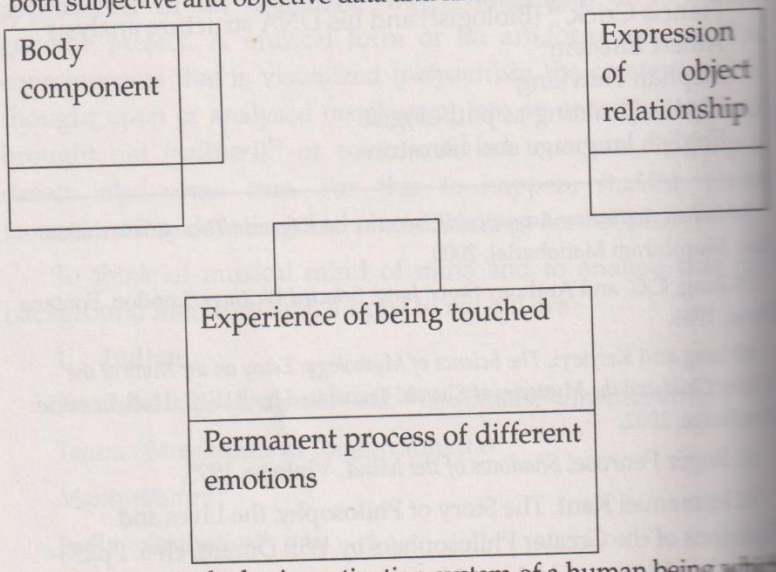
63 Wittgenstein, Ludwig. *Philosophical Investigations*. Translated by GEM Anscombe, Oxford B. Blackwell, 1953.

64 Francis Crick, Medical Texts also Interview in Susan Blackmor, Conversations on consciousness, Oxford University Press, 2005 (Ref. 1. Interview no.5).

65 Ideas and Opinions of Albert Einstein, Based on MEIN WELTBILD Ed. Carl Seeling. Translation and revision Sonja Bargmann. Rupa & Co, Souvenir Press, 1984.

66 *Brief History of Time*, Stephen W. Hawking. Bantam Books, 1988.

Whatever I communicate will be subjective feelings of significance for me based on these knowledge systems. Another person who assesses with only one or more of these will be having his/her subjective self analysis. Science has to take into account this subjective experiences as well as the objective statistical models in a given population which shares a feeling of significance to pass a critical level. That is why in music therapy, in my pilot study, I assess both subjective and objective data and find a correlation.



Emotion is the basic motivation system of a human being which primarily causes its actions, behaviour, thoughts, etc. Sloboda[67] therefore underlines the shift in definition of emotion in music psychology. The term emotion shifts to musical experiences here to an experience of an emotion[68] (Vink 2001-145-146). Emotion is being touched as a musical experience when you are touched or moved by

67 Sloboda, John A. *The Musical Mind: The Cognitive Psychology of Music*. Oxford: Clarendon Press 1985.

68 Vink 2001 –145-146 Vink, A. (2001). Music and Emotion Living Apart together: A relationship Between Music Psychology and Music Therapy. In: *Nordic Journal of Music Therapy, 10(2),* 144-158.

music. In therapy, this touch is more important than any other thing. Being touched is always a subjective feeling. These vary from person to person. Therefore, to analyse music for music therapy, it is not the *rāga* alone, but how much the *rāga* moves human minds is also important to get positive results. The kernel of any emotional experience is being touched. It is like a play *(līlā)*[69] without purpose, just for the pleasure of play for a child. This first level touch state causes different stages of objective relationships in the second level (Chart 5: The experience of being touched-object relationship).

Personal association and preferences are needed for geriatric/dementia cases, while it is not needed for successful GIM processes. GIM[70] works on the basis of associational processes and the music experience. We perceive ourselves more and more of the music step by step, in every stage of our listening/life/and within that process of understanding, we perceive our emotion/reaction to all perceptions, even emotion to an emotion at certain stages. We are able to regulate problematic self perceptions, in the stage of therapeutic process and an emotional shift happens causing self healing. This is experienced by the therapist first, then tried upon the patient/client. Music is a change agent for the mood shift, according to Sloboda.

We sometimes experience a thrill when a new or an unprepared piece of *manodharma* occurs in a *kuccheri*. To recognize that change, we should have heard the same piece with concentration, from the same musician or a different musician. The thrill is the altered mind state of a devoted listener, or of a listener moved by the first time by such a music. A mild *gamaka* change, or a *svara prasthāra* or very minor changes even produce altered states of consciousness, both in the listener and the singer. Inter-textural and intra-textural interactions thus happen between the musician and the listener. Similar reactions occurring between therapist and client should produce a positive mood shift to have positive effect on health.

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[69] Jahari, Harish Līlā: *The Game of Knowledge*. London: Routledge & Kegan Paul, 1980.

[70] GIM Hans Bonny Refer Part 1.

Listening: Cognitive and Affective

A temporary result of emotion shift is an effect whereas a permanent effect is a cognition or behaviour. If the client is annoyed, enraged, angry, scorning, hating, anxious, scared, timid, lonesome, surprised, sad, depressed, melancholic, ashamed, empty after a music piece, the negative object relationship shift has occurred and that music is not good for the client. If the client is interested, affectionate, joyful, listening, relish music, satisfied, relieved and happy, that music is good for him/her.

This is the method by which I tested the cognitive affective behaviour of my clients with Yesudas music.

As being touched is the core experience of individual listeners, emotion is the shift of an experience and music is the change agent. Each time heard, and interpreted and enjoyed musical experiences or emotions differ. Timber, dynamics, rhythm, melody changes can alter the musical experience. The graphic summary of modes of listening is given as follows:

In the therapy room and outside, an interpersonal and intrapersonal, intermusical/intramusical relationship develops between therapist/musician/client.

The activity of listening within the context of music therapy is a complex and personal matter. It is not the same as hearing music which relates to our ability to perceive sound by organ of hearing. Listening is connected with attention, concentration, focusing on something/somebody. It is a cognitive as well as emotional act. The question is how much we are involved with music, and how do we listen in different situations. The therapist should be able to understand this in order to experience the client, and for the success of the therapeutic course and its success. The personality and the emotional content of the music and the musician/therapist are thus crucial for a successful therapy. That is why, music cannot be prescribed as a medicine.

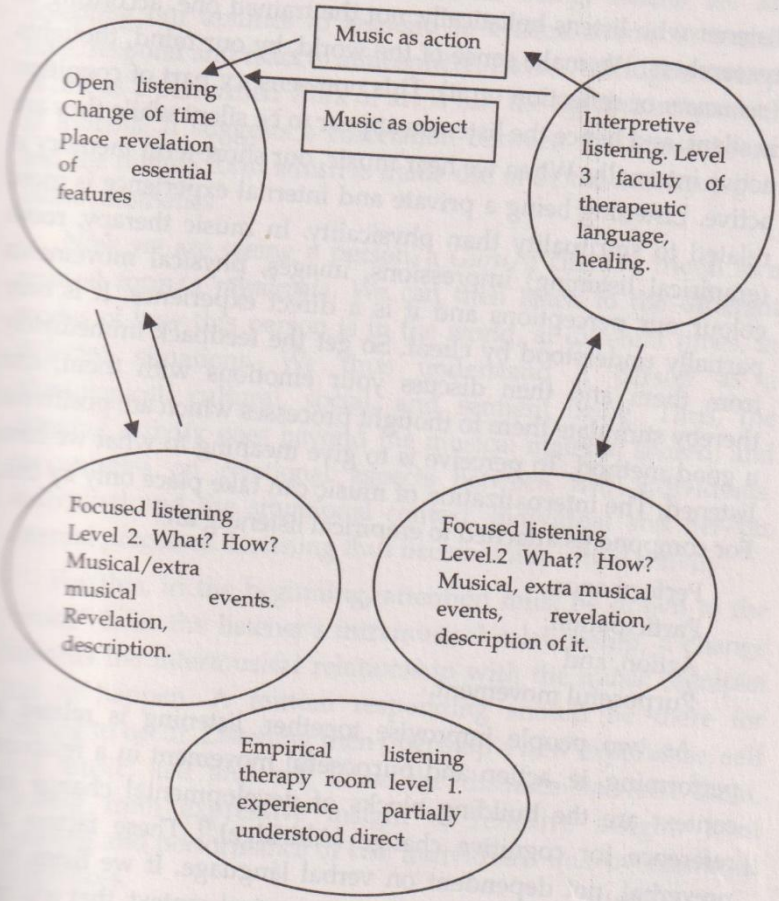

Fig.7.1 Graphic Summary of modes of listening

Listening activity

Listening to something/somebody means we are prepared to hear it, we enjoy listening to it and we want to hear more of it. We are also allowing the other person's thoughts/music to enter our neuronal network, thereby being influenced by them. Perception is more comprehensive. We perceive holistically with all our senses, not just by ears, the music we love. It is the naïve

listener who listens holistically, not the trained one, according to researchers. We make sense of the world, by our mind, thoughts (*mananam* or reflection on it). This non-sensory part of cognition is silent, and hence the listeners appear to be silent while they are active internally. When we hear music, our short-term memory is active. Listening being a private and internal experience is more related to spirituality than physicality. In music therapy, room (empirical listening) impressions, images, physical movements colour our perceptions and it is a direct experience. It is only partially understood by client. So get the feedback immediately from them and then discuss your emotions with them, and thereby stimulate them to thought processes which are positive is a good method. To perceive is to give meaning to what we have listened. The internalization of music can take place only by this. For components attached to empirical listening are:

Performance,
Participation,
Action, and
Purposeful movement.

As two people improvise together, listening is related to performing, ie, action and purposeful movement in a relational context are the building blocks of developmental change and reference for cognitive change (Aldridge).[71] These factors are preverbal, not dependent on verbal language. If we listen to a person as a piece of art, or a *rāga* in musical context, that will free us from our personal pathological view points. Listening to a person in this way, is directed towards aesthetic expression, and every human being has this potential, even your client, however unmusical he/she may be, because he/she too has the species-specific order/rhythmic *rāga* in him. The concept of every human

71 D. Aldridge. A. *Music Therapy Research and Practice in Medicine from the of the Silence*. Jessica Kingsley Publishers Ltd.1996 and The Body, its Posture and poetics: The Art in Psychotherapy 23(2)105-112,1996 h.

and hence every adult as a musical being, means we are accepting our abilities to respond to cyclical events in cosmic time, respond and react to atmosphere. David Aldridge's concept of self as a performed work of art is like the *rāgadevatadhyānam* [72] of Indians. It suggests a correlation between the musical form and the human form which is made use of by the *nādalayayogi* in Indian aesthetics.

Now we are seeing a person/a *Guru*/a client/a friend as a musical form/a *rāgadevata*. We can then listen to the different modes of how this person is in the world, at different times, in different situations. We thus understand a person as a physiological, cultural, social, and sentient being. Thus, the listening activity goes beyond the musical material shared, and concentrates on relational aspects between two individuals, individual and the situational context, individual and her/his internal processes. Listening thus becomes a spiritual activity.

For this, in the beginning, attention must be drawn to the "voice" from the listener's intramusical relationship, a change towards the intermusical relationship with the music therapist has to happen. A mutual responding should be there for healing to occur. Listening then opens up a new experience, self and music, self and self loose the distance between them, moving from expressive insight to reflexive insight. Joint listening and performance of two individuals thus overcome all differences.

Open listening

In our home, when we listen back to the session, context, time and place are changed, we are distant from the performer and the session. It confirms our intuitions and impressions that

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[72] *Dhyānastavam*, compiled by Ramakrishnakavi, Munshiram Manoharlal Publishers, Sec ed. 1983.

arose during the session. Bruscia[73] (2001) and Lee[74] (1995) have referred to this. Lee calls it holistic, which is more in naive listeners than in pundits.[75] Pavlicevic (1997)[76] called it second listening.

This open listening from different points of view gives us intuitions. Then the role of an outstanding listener or an improviser, who has stepped out of his/her ego and empiricism, happens.

Focused listening

Then we focus on certain events of the improvisation according to our *manodharma*, both musically and extramusically. Here, music is not an action but an object. The therapeutic language as in this book happens at this stage only.

Level 1 is recorded material or live performance. The body of the music.

Level 2 is descriptive musical language, what and how, are expressed and is the level of revelation/description. What means the aspects of contents, the music, its lyrics, gestures, movements, patterns of interaction, etc. How means the quality that refers to the aspect of the relationship. We are describing what is going on.

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73 Bruscia, K.E. (2001): A Qualitative Approach to Analyzing Client Improvisation. *Music Therapy Perspectives*. Vol. 19.7-21.

74 Lee. C (1995): The Analysis of Therapeutic Improvisatory Music in A. Gilroy and C. Lee (eds) *Art and Music Theory and Research* (pp 35-49)London: Routledge.

75 Naive: Lacking worldliness, artless, inexperienced, simple as a child, untrained in arts, not previously experienced, or exposed to certain experiences. Synomyms: simple, innocent, ingenuous, unsophisticated, natural, unaffected, guideless, natural simplicity. A naive person is natural and simple. (Ref. pp. 1024. Universal Dictionary Reader's digest,. Consultant ed. Dr. Robert Ilson).

76 Pavlicevic, Mercedes: *Music Therapy in Context: Music, Meaning and Relationship*. London: Jessica Kingsley Publishers, 1997.

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using lexical labels, and musicological terms. Level 3 is when transference, counter-transference occur, listening focused on significant moments, in terms of healing. Therapist has to focus on her/his own as well as the client's responses to get a successful healing result. Unless you are not focused on your own inner processes, you can never focus on another person's (client's) inner processes. Hence, this part is very important that is the importance of having our own MLP analysed first before analyzing another one's. My MLP is partially analysed in two books (*Pātheyam*[77], and *Without a Stumble*[78]) and the third level approach is given (partially) in this book. A qualitative change of expression happens at this stage, you can express things only metaphorically, in third level. Based upon this, one has to understand the hearing of music and listening to music are different. Even the listening has different levels, some of them showing a process of abstraction. Quality and interpretative discourse gradually improve as we move from one level to another. Most of the clients may be at the first or even lower levels, and to have meaningful communication with them, we should know at what level we are talking so that we avoid confusion.

Here I will give a short exercise I give to my clients, which you can try with your own material on yourself first, and then on your friends, acquaintances, and lastly on clients.

Exercise

1. Give a short audio example of a musician's song. Either live or recorded. Concentrate on voice. So that a recording of just the voice would suffice probably with the soft drone of a *tambura*.

The list of music (for listening experience data collection) I usually give to my clients at this stage is given below.

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[77] Nalapat, Suvarna, *Patheyam*, Kottayam, D.C. Books, 2004.

[78] *Without a Stumble: A Book on the Spirituality of Music*. Nalapat Press, 2005. Dr Suvarna Nalapat.

Table 7.1

Yesudas [79,80]	Bhuvaneswari
Rāmapāhi meghaśyāma (kāpi)	*Enna tavam ceytane (kāpi)*
Māmavaraghurāma (sāraṅga)	*Keśādipādam (rāgamālika with sāraṅga, mohana, śrīraga)*
Rāmarāma rāmasīta (husseini)	*Guṅgurubhaje(Hindolam)*
Śrīrāma śrīrāma sītamanohara (shahana)	*Minnumponnin kirīṭam, tiruvāranmula (shahana)*
Varalīlagānalola (śaṅkarābharanam)	*Vātāpi (hamsadhvani,*
Karuṇājaladhe dāśarathe (nādanāmakriya)	*Śaṅkarābharaṇam janyam)*
Ammā, amuthe ennamma (śyāma)	*Nāmaśravaṇasukham (yamunākalyāṇi)*
	Uyyalalūkavayya (nīlāmbari)
	Mānasasañcārare (śyāma)

(Note that none of these are unfamiliar /rare *rāga*s in the initial stage of hearing with the clients).

2. Impressions of the same song created in different individuals vary, and discussion of it will create an interaction between you, the music therapist, and the client. For this, do not express your views first, give a chance for them to participate and express.

3. The overall description of it is described in words—language (that is analytical M.T) and preferably written format (feedback).

4. Listen to the same piece together. Directing our attention to what is liked by the client.

5. Note the sudden change in dynamics of the relationship between you and the listeners, through the medium of music and musician. (Three individuals are now involved in relationship not two).

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79 Saint Tyāgarāja's *Śri rāma divya namāvali*. Dr. K. J. Yesudas. Taraṅgiṇi/BMG. Crescendo pkd 04/2002 0000CLS 0058 P& C 1989,Taraṅgṇi.

80 Amman Bakti padalkal, *Arul tarum Navaśakti nāyaki*. Dr. K. J. Yesudas. Taraṅgṇi pkd.09/04.CDTADEV T 381 P&C 1992,Taraṅgṇi.

6. The voice, emerging out of the mutual play as the leading voice.

7. How the perceived musical material has been structured into the descriptive musical/interpretative therapeutic language?

8. What happens when we sing/perform together. How it changes the mood for better?

9. Ask the question to yourself. This moodshift is only temporary. What should I do to make it permanent for healing purposes?

This is the way, to do a critical analysis of your own performance as a therapist and the value of the music you have used, as well as the musical preferance assessment.

Only in the second listening I try the open listening technique and after a series of informal sittings only I add the rare more specific *rāga*s, to those common *rāga*s already in the musical environment of the client. It is in this later steps that I add the *Melakarta rāga* to the repertoire of therapy.

Here I have given how to organize and structure the activity of listening.

This is not the same as organizing your physical/mundane day-to-day world activities (*sthūladeha)* described. This has come to organize activity of our mind/intellect level (emotional response to music, and the analytical, intellectual analysis of that response). This is actually a thought about thought which has a mangrove effect.[81]

Usually an island gives a base for a seed to grow. But in the case of mangrove, it is the seed which creates an island around its floating roots. It is an inverse flow of events, happening in a thought about thoughts.

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81 Shuter-Dyson, Rosamund, and Clive Gabriel "The Psychology of Musical Ability:" 207. London: Methuen, 1981.

Problem of Consciousness

For Bernard Baars, who developed the global workspace theory, it is an original fascination of the human thought and only when the question is a personalized one (mine, yours). The question of mind-body paradox arises and the dialogue of this dualism is like the dialogue of the deaf, and will go on for ever without arriving at a solution. For Ned Block, it is the techni colour phenomenology. For David Chalmers, who coined the term hard problem, it has to be looked in the third person perspective of science and not in the first person perspective. Science is objective and consciousness is subjective, according to him. For Francis Crick, the easiest way is to talk about qualia, while according to Dan Dennett, we have to get rid of qualia altogether. These are just some examples of how the world's best brains look at consciousness as given in Susan Blackmore's book.[82]

I have looked at human consciousness, both from the subjective and the objective ways, as suggested by the scientists and try to correlate my personal consciousness with the consciousness of the best brains of the world, both ancient and modern.

For this, I analyse my visions (lucid visions during *nādalayayoga)*, my dream visions, and also my cognitive powers in

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82 Blackmore, Susan J, "*Conversations on Consciousness: What the Best Minds Think about the Brain, Free Will and What It Means to be Human*". New York, Oxford University Press, 2006.

various subjects that span from art to science, from 6000 BC scriptures and cave writings to most modern science concepts in various branches.

This is what we, in Indian *Advaita* philosophy, call *svānubhūti* (one's personal experience) compared to the world's experience (*para anubhūti*). When we look at our own consciousness and try to communicate to our fellow travellers in the journey of life naturally we have to use the term I (first person) or *Aham* in Sanskrit. Then when we compare that with the world's experience we understand the biological I (*aham*) is the part and parcel of the cosmic *Aham* which we call the Brahma and hence the dictum of *Aham Brahmāsmi* (I am the cosmic I). I am not drawing any comparison to the China brain of the modernist here. But if you think a little deeply, the Indian *Aham Brahmāsmi* suits each individual brain (not only of humans, but of other living things and even of non-living things though they do not possess a brain but the essential elements and atomic structures are the building blocks of our biological world) and every object in the universe as part of a coordinate or correlated neuronal network of the cosmic *puruṣa* (Brahma

In my study, I have included *Jyotiṣa*[83,84] (astronomy, cosmology, mathematics, astrophysics, quantum mechanics), music, proto music, linguistics, protolanguages[85] and proto cultures of the world, medicine and proto medicine of the world, etc. For these, I have taken a few brains from the East and the West and studied their writings in detail (which are their thoughts and hence consciousness).

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[83] *Pañcasidhāntika*. Rediscovering India through Pañcasidhāntika of Varāhamihira. Dr. Suvarna Nalapat. sec. ed. 2000. N. B. S., Kottayam.

[84] *Sadhusindhu: A Commentary on 12 Major Upanishads*, Dr Suvarna Nalapat, D.C. Books, Kottayam. 2003.

[85] Protocultures of the world, Pragathy, 1989, Dr. Suvarna Nalapat.

The questions whether brain is causing an experience or an experience is causing a brain activity, whether the neuronal event is the cause or the behaviour is the cause of the event had been controversial from time immemorial. In my childhood, there was a famous Tamil song which asked

Kodi asaintatum kātru vanthathaā
Katru vantatum kodi asaintata

(Did the movement of the tendril cause the air movement (wind) or did the wind cause the tendril to move)? When Francis Crick asked the question, did the sunrise cause the cock to call or the cock's call caused the sunrise, I just remembered this song. So the Nobel Laureate and co-discoverer of the DNA structure Francsis Crick's consciousness has asked the same type of question like the artist poet Kannadasan, and their brains though functioning in entirely different spheres of activity, and though they lived in different continents and speak different languages, have something in common. This *ekam* in *Anekam* (unity in diversity) is the beauty of our world. This is the answer my consciousness gives me and what I infer from the experiences of others. The conscious knowledge and unconscious knowledge in the global workspace theory are really interesting. Stephan Laberge's self transformation through dreaming has several parallels in history, as well as in my biological life experiences. The meditational experiences, imagery and lucid states created by music is my favourite experiment with myself and with many of my acquaintances and students and patients. I am very much impressed by the binocular rivalry. In 1890, William James raised this subject first in the Western scientific world. The image of a monkey's face in left eye, and that of a sunburst in right eye, you cannot see both at the same time, you see it either as the one or the other. This later on found place in the duck-rabbit picture of Wittgenstein,[86] and in quantum mechanics appeared as

86 Wittgenstein, Ludwig *"Philosophical Investigations"*. 193-208. Oxford: Blackwell, 1963.

Schrodinger's cat.[87] This is an image we often see in *advaita* as *Rajjusarpa*.[88] There is a piece of rope which is seen as rope by someone. Another (either due to dim light or lack of eyesight) see it as a snake and is afraid of it. Once the man understands his folly and recognizes it as a rope the truth of *sarpa* (snake) vanishes. The truth is sometimes like that. When you are conscious of the rope you are not conscious of the serpent. When you are conscious of the serpent you are not conscious of the rope. This allows to compare the two states of dream and consciousness or an unconscious representation and a conscious representation. Just as any other scientific question, this is a testable question.

When I was dealing with the theory of multiple intelligences[89] and its uses in educational system, I found that some people had a predominant musical intelligence, others had a predominant logical mathematical intelligence and so on. Why this disparity? Because some of the brain areas may be having a better function. Gerald Edelman had put forth a Neural Darwinian theory which postulates cooperation and competition between massive number of neurons in the brains and the winning neurons (coalition) are the conscious ones, the others are also functioning but not in the limelight of the stage of activity. So all of us have all the potentials for development of artistic and scientific faculties and possibility of one developing only one faculty is due to the neural Darwinian or dynamic core hypothesis. Suppose there is a person in whom the two sets of neuronal coalition for art and science (we will say, right and left) function equally balanced, and none is taking the upper hand

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87 Lockwood, Michael, "*Mind, Brain, and the Quantum: The Compound 'I'*. Ch. 12, Oxford. B. Blackwell, 1990.

88 *Rajjusarpa of Śānkara: Brahmasindhu A Study of Sankara's Brahmasutrabhaśya*. D.C. Books, Kottayam April 2006, Dr. Suvarna Nalapat.

89 Gardner, Howard: *Frames of Mind: The Theory of Multiple Intelligences*, London: Fontana, 1993.

he/she can understand or cognise both arts and sciences and in such a brain the duality of art and science/spirituality and worldly life can get nullified. The lucid intervals of meditational life of several people in the past, like Buddha, Kṛṣṇa, Christ etc. and in the present, could be such states as postulate. This is what Indian, Chinese and Kabbala meditational techniques claim.

The variations in sensations make worth beautiful, just as variations in human personalities, variations in fauna and flora, multicolours and multiple arts and intelligences decorate our life and make it enjoyable. Understanding the basic unity and then enjoying the multiplicities of our earth around is probably what a human being can do to lead a blissful existence.

How do we discriminate a singer's voice from others? Some say because of familiarity. But how it became familiar? They say because he/she has been singing for several years and we have been listening all these years. But, how could he stay in the field so long with this much competition, and how come to know that the listeners like us still are fascinated by the same voice, and we do hear the same voice? How in the first place this voice became like this?

The singer's voice is what it is because it has a particular power spectrum. And that makes one voice attractive and another unattractive. The power spectrum is a modern word in English language. The musicology of India in Sanskrit will use the word *śakti* for power and *Varṇa* for spectrum. The good spectrum (*suvarṇam*) according to *Sāmaveda* traditions is what we call the *svara*. But *svara* is not the voice of a particular individual alone. It is the spectrum of *saptasvara* or the octave as we call it now. Now the second line of questions comes. How do you discriminate between the different notes in a spectrum? All music lovers claim they can discriminate the notes. But how?

Good resonance

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Each note has an internal structure, just like the colours of a spectrum. Our brain is sensitive to that internal structure and that is how we discriminate the notes. The sound of middle 'C' is a compression wave train of frequency 263. If C7 is played it is actually not a single note but a C, E, G and B flat played simultaneously. It is actually a four note, or C7 is foursome, and *catuśruti*. Just like the colour yellow, which is a composite colour, an activation vector of three different types of cells.

When we speak of a vector of three or four types of cells instead of *triśruti* or *catuśruti*, we come to certain properties and operations like changing the length of vector by rotation of it.

Now we are talking about consciousness and we are speaking of hearing (acoustics), seeing (optics), colours (chromatics (*Śruti, darśana, varṇa*), in terms of mathematical formula. This is exactly what was done by the Sanskrit speaking ancestors.

When we look at someone's brain, don't think that we are seeing his/her brain, understand that we are seeing or having an awareness of our own brain. When I look at Śaṅkara's brain, or at Einstein's brain or Tyāgarāja's brain through their works and life, I am looking at my own cognition, my own brain and its awareness and consciousness. This process of self-awareness can happen with conscious effort or unconsciously in sleep or altered states. The fact is knowing our brain events by virtue of their belonging to one's own conscious biography, as they are themselves, from inside, by living them, by self-reflectively being them (or because they have an internal structure we recognize them and are aware of them). Intrinsic attributes are disclosed by awareness. They are self-revealed, in the sense that our own awareness reveals them to us, but for that revelation a specific and appropriate type of conscious activity or lifestyle may be needed as yoga science teaches us. To directly gaze at our own self, without allowing the mind to wander is the technique and for this, the best is music, since it is inherent in human beings to

forget every other thing when one listens to music and enters a transcendental plane. This *nādalayayoga*[90] of *Sāmaveda* or *Gandharva* music was one of the essential teachings of Kṛṣṇa also.

Awareness is likened to a lamp or light sweeping around the inner landscape of the brain by modern thinkers and scientists. The ancient also likened it to a lamp, and to the all revealing light of the sun. The light is only revealing the already present qualities or parts of the landscape of our brain. The quality of awareness is already there in the brain. It is the being, not becoming. And it is revealed to us in a flash of lightening. We do not see the searchlight. We only see what the light reveals.

Translating that into a mathematical language, which the ancients used to measure the stars and observables of the cosmos *(Rāśicakra)* where real numbers exist on an infinite horizontal line and complex on a vertical. The negative signs show corresponding imaginary numbers. The *Mithuna* or couple is [91]*Rathantharasāman* and *Bṛhadsāman* (*devi* and Viṣṇu) for the *ṛṣi*.

Multiplying a number by another on this is equivalent to rotating or changing length of vector.

Multiply by 2= double length of vector

By –1=rotate through 180 degree

By –2=rotate through 180 which is also doubling the vector

Multiply by I which is squareroot of –1=anticlockwise rotation by 90 degree.

Complex number 1/squareroot of 2+.1/squareroot of 2 =45 degree anticlockwise rotation.45 degree X 6 times=270degree

8 times =360 degree.

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90 *Without a Stumble: A Book on Spirituality of Music*, Nalapat Books. 2003. Dr Suvarna Nalapat.

91 Nālapaṭ, Suvarṇa. *"Without a Stumble: A Book on the Spirituality of Music"* Nalapat Books, 2003.

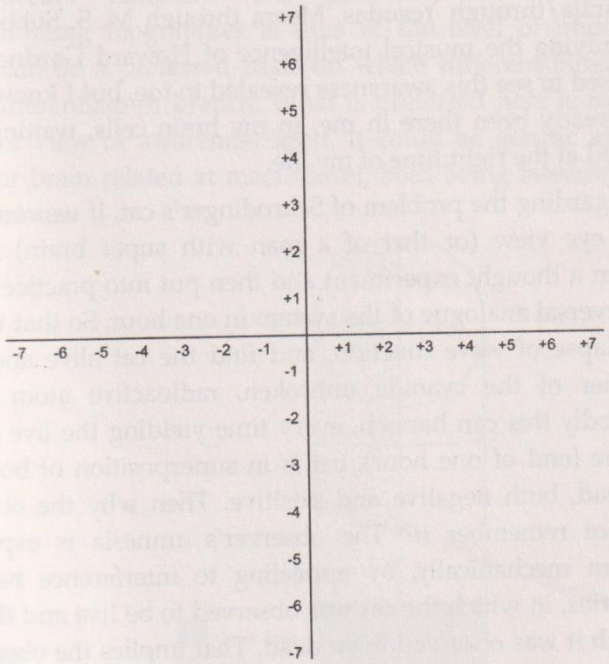

Fig 8.1 Argand Diagram

Real numbers and complex numbers, identifiable *saptasvara* and the weak unidentifiable multitudes of *Śrutis*, identifiable colours in the spectrum and the various shades in between, and the 72 *melakarta rāga* scheme itself with the complex *vivadi* scales and simple *samvādi, vādi* scales are following this rule of the cosmic *rāsicakra*. Now it is called the Argand diagram[92] (Fig 5). Earlier that name was not there. But the principle was used in every science and art of our land. What is in a name. The rose is a rose whether you call it a rose or not.

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92. Argand diagram, Ch 11, stars and observables. *Mind, Brain and the Quantum, the Compound I*. Michael Lockwood, Basil Blackwell, 1991.

When I look into the consciousness of a musician (Tyāgarāja/through Yesudas, Meera through M. S. Subbalaxmi) for studying the musical intelligence of Howard Gardner, I am surprised to see this awareness revealed to me, but I know that it had already been there in me, in my brain cells, waiting to be revealed at the right time of my life.

Regarding the problem of Schrodinger's cat, if we consider a God's eye view (or that of a man with super brain) he can perform a thought experiment and then put into practice with a time reversal analogue of the system in one hour. So that there is no collapse of wave function, and find the cat alive and well, container of the cyanide unbroken, radioactive atom intact. Repeatedly this can happen, every time yielding the live cat. At the time (end of one hour), cat is in superposition of both live and dead, both negative and positive. Then why the observer does not remember it? The observer's amnesia is explained quantum mechanically, by appealing to interference between trajectories, in which the cat was observed to be live and the one in which it was observed to be dead. That implies the observer's branching of biography followed by reconvergence or superposition of histories. The microscopic superposition as well as a macroscopic superposition of history are possible at the same time. Taking biography as history, biography of any person is only a straight line on a solid cylinder like structure with time on the vertical axis.

Biography (MLP) as solid cylinder

The green zone in our biography starts and we observe it, blue and yellow are two possibilities into which it can branch. But they can reconverge. Biography is a single stream of consciousness with which continuous infinite parallel systems/streams can be replaced. That is, it is not branching, but only differentiating that is taking place with time. I think we can compare it to a tree, where the seed differentiates into what it was destined to be, into a full grown tree, and then branching

also occurs naturally. The probable of branching or differentiating biographies is thus at the level of microcosm. There can be a preferred basis on which different biographies may differentiate or branch. What is preferred here is from the point of view of awareness itself, it could be genetic at micro level, or brain related at macro level, both being interconnected as correlates.

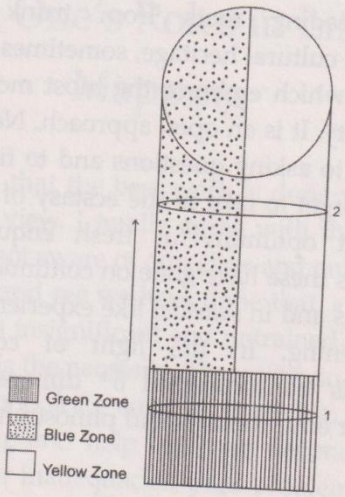

Fig 8.2

This also explains problems of amnesia of dreams after a sleep, amnesia of long term memories of the past in Alzhiemer, and also amnesia of multiple births. In *Gītā*, Kṛṣṇa says, "Arjuna, I and you had been here for several times, I do remember each of it, but you don't. This is what I mean by a God's eye view."[93] When time comes, if we are having an appropriate lifestyle, and if we deserve it, the amnesia is taken away with God's grace and we do get revelations of this kind. So when we study consciousness in our biographical notes, not only the things we

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[93] *The Bhagavad Gītā*. Śloka 1-5.ch 4.Jñānakarmasanyāsayoga. pp 88-89. Words of *Guru* Kṛṣṇa to Disciple Arjuna. Souvarṇa Gītābhāṣya by Dr Vinoo Nalapat.

do in day-to-day life of waking states, but also our dream, lucent interval near death experiences, our *samādhi* experiences, etc. also count, and then only we get the entire picture of differentiation of our life from infancy to adulthood, not in physical sense, but mentally, intellectually and spiritually. My autobiography is trying to unfold my inner life and its differentiation and branching into various art and science subjects as a banyan tree, sometimes spreading roots from trunk into depths of archaeology and cultural heritage, sometimes making tiny leaves and red shoots which embrace the most modern concepts and ideas of humanity. It is an open approach. Never does it close to knowledge and to asking questions and to finding out answers. Never does it forget to take in the ecstasy of music and keep its energy level at optimum for fresh enquiry. Even without conscious efforts these have gone on continuously without break in dream visions and in *samādhi* like experiences both in and out of music listening. In the light of consciousness based education,[94] this transcendental 6th dimension wisdom has a special value for educationists and philosophers and scientists.

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94 *Consciousness-Based* SM Education: Principles, Practice, and Research Susan Levin Dillbeckand Michael. C. Dilbeck. Maharishi University of Management, Fairfield, IOWA, U.S.A. Adapted from *Modern Science and Vedic Science*, Vol.1, No: 4, 1987, pp: 383-431.

9

Organising One's Roles in Life as Brain Mapping

Colin Turner[95] says that the best work is done when you forget your own point of view. I totally agree with that. We do lot of work when we are not aware of ourselves and only after the work done we look back and see we have done that, and wonder how was that done by an insignificant and untrained person like me? The reason we find is the necessity. There was no other way to do it yourself, no one to look for support or advice, but you have to do a particular thing and help someone depending upon you. Then you forget your inadequacies, your problems, troubles and set to work upon a goal. That is one way of getting a thing done and learning in the process that you have been doing what the trained people were doing, but unconsciously.

The other way of looking at it, especially the mystic, musical, artistic talents, solving a problem etc in deep sleeplike or transcendental phases when you are not aware of your identity or personality in the narrow sense. There is an alignment of cause and effect which creates balance and increases the quality of work and quality of life, according to Colin Turner.

When we write a diary, it is a running commentary, or a prospective autobiography and we may not know the

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[95] Turner, Colin, "The Eureka Principle: Alternative Thinking for Personal and Business Success." In *Be Yourself* (ch 2), Shaftesbury, Element, 1995.

significance of each event. When we look back at certain stages in our life, it is a retrospective story and its analysis (analytical narrative) and most of the stories given by clients belong to this category. It is part of narrative medicine now.

We have a consciousness that experiences in *jāgrad, svapna suṣupti* and *turīya* states. The experiences we have in *dhyāna, samādhi,* musical states of altered consciousness (*nādalayayoga*) in near death experiences, after death communications etc. are part of us. We can't say that that experience is not true, but this is true and that is false. Especially when confronted with a life and death situation in real life, near a dying patient and relatives. Hence, it is better that we know what it is in ourselves first (self analysis).

Autobiography as narrative medicine consists of an organization as brain mapping, genealogy or roots of our family, ancestors and these two are part of our *sthūladeha* and *loukika* experiences. Our dreams, our imaginations, etc. are part of the *svapna* state and are subconscious. ESP is part of *suṣupti*, yogic and musical visions and imagery and is a super-conscious state. In fact, musical experiences have counterparts in all these. A dying client and a highly creative person narrate ESP of various kinds. These are not supernatural or superhuman, and are perfectly natural and humane to any human being. They are not miracles either. They are not unscientific also. They are just part of our being, our human nature. When such experiences occur to us or to others, understand them not as miracles or as supernatural things or unscientific mad creations of mind, view it with compassion, and with a scientific mind.

We have a physical body, an emotional body, mental/intellectual body and a spiritual body which for Indians are *sthūladeha, manas, budhi* and *Ātma*.

Dr Suvarna Nalapat

Table 9.1

How alignment creates balance?

Cause	Body	Effect
Unifying principles	Spiritual body	Meaningful values
Established mission	Mental /intellectual	Sense of belonging
Worthwhile goals	Emotional	Quality of life
Action plans	Physical body	Quality of results

In this chapter, I am giving the action plans which my physical (*loukika*) life and body made it absolutely necessary to carry on certain duties in day-to-day world (*sthūladeha* activities). But, don't misunderstand me by looking at this that I am a very practical person. The practicality is there, but recognized by me only after the result was achieved. An unconsciously achieved conscious effort/result which was recognized by the doer when recollection of the life is done or rewinding the memory. This often happens to me. I grasp meanings of life not by logic but by experience or perceptions and later on find out logical explanations for it from books.

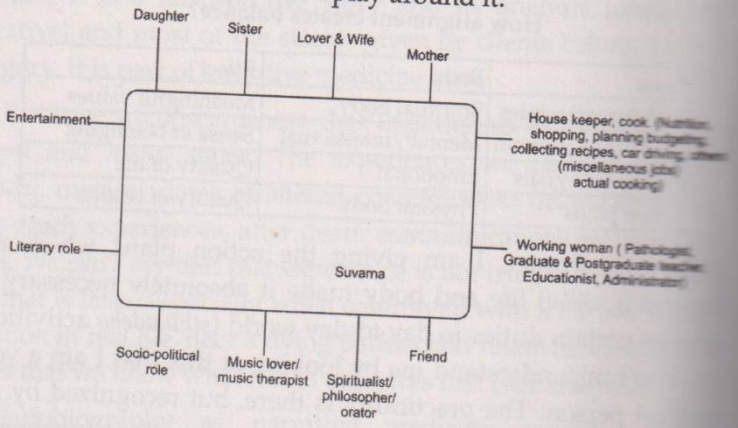
Brain mapping is a free association to build up a picture of a map of your life. Analyse what you have done in each role. How much you enjoyed it. How much was the success rate. It is an exercise which gives information about

1. who you are
2. what you do or what you think you do and how you feel about it. This may appear as a subjective thing.

But in the second step, you identify/clarify the different roles you play in an objective way, record a typical 24 hour diary for each period of your life and thus how you did your time management and it becomes an objective analysis of your life.

It is difficult to identify all the roles one plays in one's life because they are too many. Here I try to give an analysis of mine,

which is incomplete. What I do is write my name in the centre and write down all the roles I play around it.



1

Fig 9.1 (Objective analysis of life as role play)

1. Daughter
2. Sister
3. Lover and wife
4. Mother
5. House keeper, cook. In this there comes
   a) Nutrition
   b) Shopping
   c) Planning budgeting
   d) Collecting recipes
   e) Car driving
   f) Others (miscellaneous jobs)
   g) Actual cooking
6. Working woman. In this my role as
   b) Pathologist
   c) Graduate and postgraduate teacher
   d) Educationist
   e) Administrator
7. Friend
8. Spiritualist/philosopher/orator

9. Music lover/music therapist
10. Socio-political role
11. Literary role
12. Entertainment

(This is not the entire picture. There are more roles for each of us in our life. Each person is encouraged to do a self analysis).

And we play these roles at certain periods in our life, or there is dominance of certain roles in certain phases of our life. How we performed the roles, how we enjoyed them and how much of our active life had been of use to us and to society is probably what makes me and you a person with some identity.

In my life, the pre-marriage period, post-marriage period (as a professional pathologist and teacher), and the retired life without domestic duties I take as three cross-sections. There are several cross-sections and most of them superimpose, yet for an easy communicability I am doing this. This time record sheet and the pie chart of estimated time used for each activity, and the achieved goals will give a rough idea of how I managed my life in a time bound way (time management).

There is a general pattern of organization of my life which I have been following rather unconsciously, out of necessity. Only later on did I understood that it is (or is said to be) the correct way of time management. There is a goal setting in each of my fields of activity. In my professional life, it could be anything like reporting a slide, giving a diagnosis in time, or discussion of a case with a colleague, organizing a seminar or workshop, or preparing for a lecture/demonstration or P. G. discussion and so on. Similarly, in my home, I have to manage the affairs of my family members (immediate and distant), attend to social gatherings, look after the affairs of the kitchen, the car, day-to-day balance sheet and budget, needs of my home aids, etc, which is a non-ending list as all of us know.

I make a goal setting in each of my field of activity first.

1. Home/family
2. Work/profession
3. Socio-political
4. Literature and music

In each field

1. A mental picture of what I want to happen (I don't want to use the word achieve).
2. What happened (How much of your dreams come true).
3. What will happen to the dream in future (or what you would like to happen in the future).

In each, I categorise the goal time limit as

Next month M

Next year Y

Today/Tomorrow T

This week W

Some time in future F

Each is given a grade of A, B, C according to priority. ABC grade is not based on time, while MYTWF is time based priority.

A. The most important

B. Less important

C. Least important

An F may be top priority to A but it need not be done at the moment. Similarly, a T may be only C or B but has to be done immediately, for smooth running of life.

On this basis, I draw a seven day action plan every week, just as we make a timetable for our students. My timetable would be somewhat like this (general plan)

Table 9.2

A 7 Day Action Plan at Home front

Goal	Priority	Time limit	Delegate Power/whom	Resource	Complete/in complete
1.son education	A	T	I	My	C
2. cooking	A	W	Home aid	efficiency	C
3. provisions	B	T	I/Husband	(e3-f)	C
4. wipe a shoe	C	T	I/home aid	Total income	C
5. budget	A	Y	I/husband	Efficiency	C
6. garden weed	B	M	Gardner	Of my aids	-
7. collect recipe	C	F	I/helper	Cooperation	-
8.son education	A	F	I	From family	C

At the end of a week, at the end of the month, and year, and at the end of your life, analyse and review what you have planned or liked to happen and what happened, and how satisfied you are, and how much could be done in future etc. (Today, at the end of my 60th year, I am doing that last one). Sometimes unexpected changes may be necessary in your course of action, and then do not hesitate to make changes is my policy. If you are very orthodox and stick on to the old plans you will be doing harm to the original goal for which you have set out. One may ask why the last and the first are son's education, and why the first is rated AT and the last AF. The first is the day-to-day school work and teaching given to a child of 5 years which has to be done each day (T), while the last is my ultimate goal of how I would like my son to be when he is an adult, a thoughtful, liberal, respectable honest man, who respects women, who understands problems of others, and one who will be a boon to society. One who is beyond the false notions of caste, creed, gender and the like. Hence it is A, but it is something for which I have to wait for some time in the future (F), but both are to be looked after by me and not delegated to others. Similarly, if I draw a professional timetable I will have to make music and its effects as both first and last (AT and AF at once) and which cannot be delegated to others, because it is the key to my own spirituality and I have to explore and discover it myself.

Time management and Pie chart of estimated time use

Below, the pie chart shows 4 patterns followed in the years (Fig 8).

1977
1993-95
1996-2004
2004-2007(now)

How the time allotted to home and profession changed is evident from this. In 1977, my son was too young, and time given to home and profession is almost equal, most of the time at home was for his education. In 1993-95, also the time for home and profession is almost equal and most of the home time is for Bhanu because he was ill. 1996-2004 was the time in Trichur Medical College, and there the time for home is almost nil, instead time for reading and writing is more. It was the time when I completed *Sudhāsindhu*.

From 2004 to 2007 is the period when I totally retired from my profession as pathologist, and hence the shift in priority of time given to reading, writing, profession (research on music therapy which was started several years ago, as a top priority, but long term goal-F A).

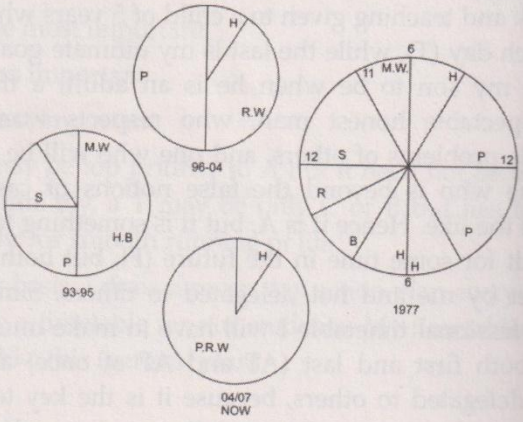


Fig 9.2

processes gave me more quality as an individual, and I think I became a better person after that. I had an intuition about the value and mission of my life even before that, but after his death I knew what my goal in life is, and how I had gone wrong in my youth, and my goals got a better meaning. The cycle of experience and personal development was getting completed on its own as God had desired it to happen. The commitment to change had already happened or occurred and the transition period created a vision of my entire life and message of life, after a revaluation of it at that juncture. To spread the word of transition, I needed to communicate to the world, and my books and speeches/lecture demonstrations (as before) became more powerful. I tried to keep up the continuity of my commitment and consistency of purpose, and the appointed change agent (delegation of power) was naturally myself. And it was with this mental make up that I moved from Trichur to Ernakulam and settled there. My transition was completed by the time I moved to Ernakulam and the events that followed proved it later.

Skill analysis

Before continuing, I would return to the skill analysis which is an essential part of your day-to-day activity. For example, at your home front, what are your skills as a cook, as a teacher, as a driver, etc. In your profession as a teacher, educationist, pathologist, etc. this one has to assess and improve if necessary. Sometimes we may not find time to improve certain skills or we may think they are secondary and can be delegated to someone else. I do not spend much time or thought on such skills. For example, actual cooking I delegate to my home aid, because she can do it better than I do.

Below I will give examples of two skills and their general analysis as I do.

There is something called a transition period in everyone's life. Usually, it has a seven-stage model.

1. Immobilisation
2. Immunization
3. Depression
4. Acceptance of reality
5. Testing phase
6. Search for meaning
7. Internalisation

These are the seven phases of transition. In my life, the time from October 21, 1992 to March 1993 was the immobilization period due to Bhanu's illness. From March 1993 to 3rd May 1995 (his date of death) was my immunization period. On May 3, 1995, I touched the rock bottom line, when he died, though it cannot be called a depression, since I had already accepted the reality of the situation by those three years of illness and his near death experience. Hence, depression was over with the first two phases, and acceptance also had started there (at this time I had written many works, literary and spiritual, poetry and prose, within very short periods of time I could snatch at the early hours of the day). The testing time started after May 3, 1995, and I had moved to Trichur in October 1995 where I started my long awaited dream of completion of the commentary of *Upaniṣad*. An activity seeking solution, a climbing out of the trough of life to its precipice. Each experience in life is a test as well as a search for meaning in life. A potentially valuable one, even the death of your near and dear one gives you insight into meaning of life, provided you search for it. Search for meaning of life through experiences which had begun at the age of 8, when my granduncle and grandmother died, reached its zenith with the death of Bhanu, and what I could not comprehend at 8, I could comprehend and accept at 49. And I had lots and lots of energy to spare. The death experience and its thought

Teaching skills

Lecture, demonstration, audiovisual skill, microteaching.

How to plan a class?

Planning a timetable for a year/18 months in Pathology.

Planning a syllabus/curriculum.

Modification/alteration in curriculum.

Change in curriculum for betterment of profession and society.

How it is done? Able to communicate to colleagues—written and spoken.

What was the success rate in each?

How the students assess you (I use a questionnaire for it)?

Interpersonal and intrapersonal skills.

Are you happy with your profession as a teacher to your child/to any child?

Driving skills

Knowledge of highway code.

Knowledge of local roads

Estimating distances

Planning best route

Eyesight

Organizing fuel

Organizing people for pick-up

Vehicle maintenance

Memory

Being in time

Estimating time

How many accidents /police cases you have?

Do you enjoy driving? On a long trip do you get a de javu[96] feeling?

If you ask me to rate myself in three of the skills mentioned (cooking, driving, teaching), I would rate me as C, B, A, respectively, based on the answers I get to the analysis sheet above.

In the case of education of my son, I ask the following questions:

1. Were you aware of the physical, mental, intellectual needs of your child, then and now?
2. How did you try to solve it at different times?
3. Did you give priority to your problems or to his problems?
4. Could you sacrifice your enjoyments for the sake of your child? Did you resent it at any time?
5. Did you plan for a long-term goal?
6. Did you attend to the short-term goals?
7. How much you helped him in homework/other activities?
8. How best is your communication with the child then and now?
9. How much did you achieve the long-term goal?
10. Could you rate him as a good individual useful to himself and to society, at the same time, a happy person with his family and society/profession?

When I ask this question, I have very good ratings to be given to me, but of course the last word in this matter is not only mine but also of my son's. What he thinks of me also counts. The questions above will give him a background to be objective in his assessment.

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96 De javu: The fealing of already experienced, or already seen/heard, a sight or a sound or experience, while actually it is something you are experiencing, seeing or hearing for the first time. Ref: page 411. Reader's Digest, universal dictionary.

My socio-gram tells me that I am satisfied with my relations. Satisfying relationships are so many at the home front, professional front and socio-political, literary fields. When I think of a 100 per cent dissatisfying relationship I can find only one (and that was a neighbour of ours who was a drunkard and hence I can ignore that). There had been some temporary dissatisfactions at professional field but those were never 100 per cent and were less than 20 per cent dissatisfaction and that was too fleeting. In profession, I had a problematic relation with a person (25-50 per cent) but that occurred after I had moved to Ernakulam after my total transition, so that I could sacrifice my ego as well as my profession in a selfless manner and devote more time for my mission in life. That turned out to be a blessing in disguise to me *(Urvaśi śāpam Upakāram)*.

Administration as leadership

I think an able leader is an efficient administrator too. This I learned by watching my father. It is really an art to be learned. I didn't have leadership qualities (even now I suspect whether I have it) and administrative qualities and I never pretended to have them. I will skip such posts and responsibilities when they come my way. That was my routine. Once I had to accept the post of the blood bank administrator in Calicut Medical College. I had no other way than accepting it as my official duty. I had a liberal dose of right genes for administration and life experiences to nurture it, yet I was reticent to take up the challenge. But I used to watch people's behaviour and knew that every person is unique and no two persons are alike. And dealing with people working with you, or people coming to you can never be decided beforehand. (No plan for personal management. *Manodharma* is the only way and an impersonal love for everyone, everything which yogis develop.) None can win the confidence of a team overnight. For that, years of communication and the trusting relationships are needed. I had belief in my character. The ability to see the goodness of department without sacrificing the

goodness of the team mates, and my ability to see them all alike without partiality. I don't know from where I got these, probably from my father (both nurture and nature operating together).

Once when I was sitting in my office room in E. I. Lab, an old Muslim lady came in to have a check up, and it happened that she was from Punnayurkulam. She embraced me and blessed me and said I looked like my father sitting in his chair and administering and leading the whole village and she was happy to see me like that and felt as if she had seen my father himself (my father was no more by that time). And that touched my heart. *Acchan* (father) was liked by all who came to him, even his opponents in the political parties used to respect him and come to him. Assertive behaviour is needed to achieve a target in any administrative unit and it is different from aggressiveness. To be assertive, one has to think through the job goal. The goal must be realistic, for the good of everyone, and the planning should be thorough, and there should be skill to complete the planned job. We will have to confront perception differences of the individuals in our unit and deal with them on the basis of the positive attitudes to conflicts. To achieve common goals of the family through team work of family members, we all strive, but when it comes to organization many people don't do that. The executive should act as a banyan tree to all alike and have trust and confidence in teamwork.

Table 9.3

An executive can have favourable and unfavourable effects on the institution

AIMS of Executive	Effect on Organisation	Effect on team	Executive
Promotion of self-interest	Adverse	Mediocrity Erosion of sense of pride of employees Erosion of commitment	destroyer

Ego	Adverse	Loss of initiative Loss of creativity Resultant unaccountability	destroyer
Organizational commitment	Favourable	Faith Self-esteem Favourable responses	Executive as builder

The problem of Calicut Medical College Blood Bank was complicated and not so easy to sort out when I went there as administrator. From 1968 onwards, the successive administrators had been trying to get a license for it, but in vain. I took charge in June 1990.

I had a thought process which I will summarise like this.

1. For whom: the service runs for the general public and also to serve the practising clinical departments who need the service of the blood bank.

2. What is the service that we offer: We give blood for the needy patients, which should be free from syphilis, HbsAg, AIDS/HIV, malaria and cross-matched properly.

3. What is done when I joined? They were giving blood without testing for the various things mentioned above and it was very unsafe.

4. Who is being exploited/cheated? The public.

5. Who is benefited? None.

6. Then why there is no action to implement the necessary tests? Authorities say, financial and the lack of cooperation from staff members. Staff members say we are not prepared to work like that because we are only very few, no new posts are created and authorities ignore our plea every time we make them.

When I inspected, the condition of the premises was very bad. The blood bags (disposable) were not purchased. And there was no license for the Calicut Medical College blood bank to

function at all to make things worse. Quality assurance and quality control were miles beyond the expectation of the blood bank with this scenario. I went through all the back files to get a clear picture before I set out to launch my action plan. I made a plan combining Indian ethos in management (as described in *Gītā*) and the Ziel oriented project planning of Germany to make an action plan. With God's grace within six months, we got license, and implemented the tests with full cooperation of all the technical staff. That made me sit up in wonder, because I never thought that it would be possible for me.

In administration of a private institution, I could not achieve this 100 per cent cooperation from my staff, and one person always made problems. May be I was personally not at ease in those days, had my own problems to sort out (frustrations), and that reduced my efficiency (E=e3-f) where 'e' is efficiency, small es are enthusiasm, experience, expertise and 'f', frustration. I could not sort out the problem of one member of my team and I resigned. That was probably a running away from one's responsibilities according to some. But to me, it appears that it was time for me to get out of the mundane *samsāra* life and turn to full time transcendental life.

Genealogy

Every one of us have roots. Our ancestors, who thought, sang, wrote, talked, cried and lived like us. History or story of the ancestors makes us aware of our nature, our genes, our abilities, potentials. Therefore, in music therapy wards, the therapist talks informally and tries to make them draw their own stories (MLP) with a family tree. How many members in your family were following the same profession? Singing, literature, medicine, astronomy and mathematics. Rivez gave a detailed questionnaire to 500 mathematicians, physicists, physicians, writers, and students and found out with the following fact:

Composing, singing, concert going activities were present in

71 % writers

67 % phycisists

59 % physicians

56 % mathematicians.[97]

What makes a musician?

What distinguishes a musician from rest of the people?

Why should an infant in cradle more responsive to music than another, though they belong to same family?

Why in the Bach Family tree alone are 47 musicians of talent and genius born while other families didn't have that record.

Are we all musical?

How can we educate our children to enjoy and truly appreciate a wide variety of music? Such questions were answered by drawing family trees. Also, it gives nostalgic memories back into minds of your clients and by sharing with them you develop a good, informal relationship.

Here, as an example of how to draw a family tree, I am giving the Nalapat family tree.

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97 Shuter-Dyson, Rosamun, and Clive Gabriel "The Psychology of Musical Ablity": 90. London: Methuen, 1981.

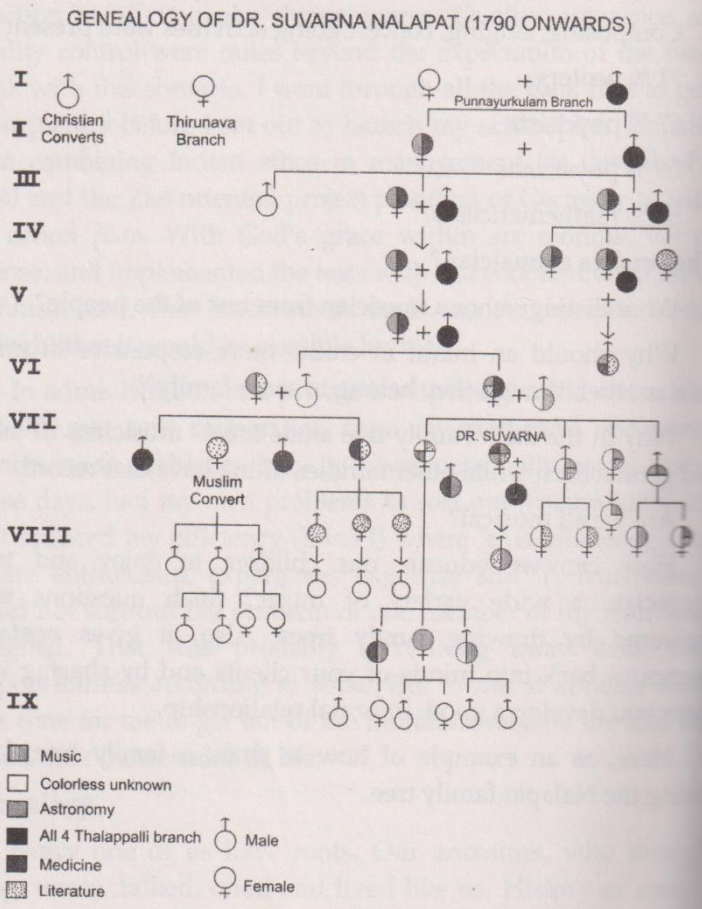
GENEALOGY OF DR. SUVARNA NALAPAT (1790 ONWARDS)
I
I
III
IV
V
VI
VII
VIII
IX
Christian Converts
Thirunava Branch
Punnayurkulam Branch
DR. SUVARNA
Muslim Convert
Music
Colorless unknown
Astronomy
All 4 Thalappalli branch
Medicine
Literature
Male
Female

Fig 9.3

10

Dementia: A Problem of Society and Time

Munro (1984)[98] defined palliative care as the abatement of troubling symptoms and use of appropriate approaches that relieve distress. Here, palliative care focuses on two areas:

1. Hospices, and
2. Late stage dementia.

The physical components to be attended in such patients include pain abatement, symptom management, discomfort control; while emotional support for patient, family members and care providers through informal friendly talks, having some time together, narrating experiences and reminiscences to each other, thereby sharing emotions, singing and music making together to establish emotional contact and intimacy are aimed at by music therapy. It is not simply writing lyrics and music making but it is leaving behind some life messages through music by two loving souls to posterity.

According to Yonekura (1998),[99] the effect of singing, physical touch and the changes in the quality of the preferred voice are

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[98] Susan Munro, CMT. Music Therapy in Palliative/Hospices Care. St. Louis, Mo: Magna Music-Baten, 1984.

[99] Yonekura,Y.(1998): The effect of singing and physical touch on changes in voice quality of individuals with a cancer diagnosis in late stages. Three case studies. University of Cansas, Lawrence.

equally important for bringing about the necessary effect. Koh (1998)[100] described the effect of singing on changes in the facial expression. For this, favourite, popular songs preferred by the patient was used. The finding was that when the music is good and the patient is relaxed,

1. He/she looks less at the investigator/singer,
2. Closes the eyes and goes to meditative moods, and
3. Drop jaws during singing.

Yonekura (1998) and Koh (1998) say live singing has more positive influence on the hospices patients. In both their studies, singing without accompaniments was preferred because of accessibility to all patients and family members who do not have a musical background to provide their own musical accompaniments.

The most characteristic feature of dementia is progressive deterioration of cognitive function. It has three phases.

1. Personality changes. Easily irritated. Reduced interest in social and daily activities. Memory deficit manifest as restlessness. Patient can function only with some assistance.

2. Middle phase. Screaming, wandering, physical and verbal aggression, paranoid delusions and hallucinations.

One type of delusion is to see the spouse as an imposter, forgetting the name of the spouse, and forgetting the major events in one's life. There is difficulty to express the needs verbally.

3. All cognitive and verbal abilities gone, become aphasic bedridden.

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100 Koh.,I. (1998): The effect of singing on the facial expression of elderly individuals in hospice/palliative care: Three case studies. Master's thesis University of Kansas, Lawrence, Q in Music therapy for dementia care by D. Aldridge.

There is agitation in all the three phases. Agitation is related to the rate of cognitive decline (Brown University 1995; Cohen Mansfield, Marx and Rosental 1990).[101]

The highest level of agitation is in the middle phase (with moderate cognitive impairment).

SUN DOWNING AGITATION[102] is the so-called agitation which increases with onset of late afternoon and night, and some patients show this (with sleeplessness).

Boredom also is a cause for the agitation. The unoccupied people are more agitated, and for them structured social activity coupled with music therapy is good.

Table 10.1

Cohen Mansfield agitation inventory (agitation related behaviour in dementia)

Cursing/verbal aggression	Kicking	Inappropriate robbing/unrobbing	Repetitive sentences
Hitting	Scratching	Performing repetitive mannerisms	Complaining
Grabbing	Eating/drinking inappropriate substances	Trying to get to a different place	Negativism
Tearing things	Hurting Others/oneself	Handling things inappropriately	Making strange noises

101 Agitation is related to the rate of cognitive decline. Brown uty long term care quality letter, 1995. Cognitive decline in Alzheimers disease linked to agitation, education. Adapted from j of gerontology, medical sciences 50 A M 49-M55, 1995. Cohen Mansfield, Marx and Rosental, 1990). Behavioural and mood evaluations: Assessment of agitation. International psycho geriatrics 8, 2, 233-245 (1996) also. Cohen Mansfield, A description of agitation ina nursing home. *Journal of Gerontology*: Medical science, 44, M77-M84 (1989) and Dementia and agitation: How are they related? Psychology and aging 5, 1, 3-8.(1990).

102 Aldridge, David, *Music Therapy in Dementia Care*, London: Jessia Kingsley, 2000.

Pushing	Intentional falling	Throwing things	Screaming
Biting	Physical sexual advances	General restlessness	Hiding things
Spitting	Pacing	Constant demands for attention	Hoarding thing

The effect of music therapy on reducing agitation

This is to provide quality life for patient and the caregiver. Drug therapy is not preferable due to side effects, drug- interactions, dizziness, risk of falling and adverse effect of increasing agitation. Agitation during bathing, in strange circumstances, during food intake, etc. may be due to some minor fear and such behaviour can be corrected easily with music therapy. Two studies have given methods to decrease agitation during bathing (Clarke, Lipe and Bilbery 1998).[103] Give tape recorded music for 10 weeks, play the preferred music only, which the patient likes and is familiar with, not some strange one.

Another study by Thomas, Heitman, Alexander (1997)[104] observed 14 patients during their bathing time. Recorded tape music, preferred by the patient selected with the help of the family members reduced the anxiety behaviour during bath time.

Any place may cause agitation if it is unfamiliar and if the change is sudden according to these authors and such behaviour can be treated with music. They say that even a moving chair or noisy streets can cause agitation and anxiety.

Goddaer and Abraham technique[105]

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103 Clarke M.E, Lipe A.W and Bilbray M.1998: Use of music to decrease aggressive behaviours in people with dementia, Journal of *Gerontological Nursing* 24, 7, 10-17.

104 Thomas D, Heitman R, Alexander T (1997): The effects of music on bathing cooperation for residents with dementia. J of *Music Therapy*, 34,246-259.

105 Goddaer' J and Abraham I. (1994): Effects of relaxing music on agitation during meals in nursing home residents with severe cognitive impairment. Archives of Psychiatric Nursing. 8, 3, 150-158.

Play tape recorded music to reduce the general noise level of the environment.

Four week programme. First week no music played. Baseline observations on the level of behaviour.

Second week. Relaxing music. Slow tempo, additional music can be selected from new age recordings, if needed.

Third week no music.

Forth week reintroduce music.

Observe with Cohen Mansfield agitation inventory.

Agitation decreases with relaxing music in the first 2 weeks, and then increases in the third week which is the control period, decreases in 4th week.

Study of Denney (1997).[106] Instead of daily observations weekly observations. Light classical music with tempo between 50-70 beats per minute.

Is the slow relaxing type of music the best for decreasing agitation?

Ragneskog et al. (1996B)[107] select three types of music.

1. Soothing music

2. Popular songs of early 40s, 50s and 60s as the case may be depending upon the age of the patients and the songs they have heard and remembered from the youth.

3. Contemporary music. Each type can be played for a period of 2 weeks, for the group of patients selected. Between musical periods, give one week interval (without music). Videotape the reactions of patients to the three types of music.

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106 Denney' A.(1997): Quiet music: An intervention for mealtime agitation. *Journal of Gerontological Nursing*, 23, 7, 16-23.

107 Ragneskog, H, M, Kilgren/Karlsson, and A Norberg. "Dinner music for demented patients: analysis of video-recorded observations." 1996: 5(3) 262-82.

Soothing music slow and relaxing and light classical types were found to be more useful to elderly patients having anxiety, agitation and early dementia.

Clair and Bernstein (1994).[108] Is the effect linked to a particular music style? They took two styles into consideration.

1. Sedative music (music for mellow minds).
2. Stimulative music (popular big band music). They also studied whether there was any difference in the effect of music during morning, noon and afternoon.

Five-day period, entire day music played. Like that for eight weeks. Control period of no music.

Observation recording three times a day. For a total of 10 days.

Sedative music (slow light classical) is more effective than the big band type and the no music treatment.

The effect of individualized music on feelings of anxiety and agitation (Gerdner and Swanson 1993)[109] in five medical patients. In one patient noting was known about her preferences. The other four could be helped since the family knew the likes and dislikes of the patient and contributed and shared much with the music sessions should be individualized to get the maximum effects though one can get some effect on a group as well.

A therapy session consists of singing together, making music together, informal sharing of musical life panorama, language intimate friendly relationship, mutual trust and love, and musical or language games with the music. Only a well

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108 Clair, A. and Bernstein B(1994): The effect of no music, stimulative background music and sedative background music on agitation behaviours in persons with severe dementia. Activities, adaptations and aging, 19,65-70.

109 . Gerdner and Swason, 1993, Archives of Pyechiatric Nursing. 7:286-291

informed listener may get deep into all these in case of a talented musician, but in the case of demented elderly people we do not expect that type of cognitive behaviour. What we expect here is improving the quality of their life by invoking the best memories of their lives, and giving love and comfort.

Music therapy is not passive listening alone, and it combines active participation in all aspects of music making and a therapist should know this. Using tapes is for two purposes.

1. For research so that the same type and style can be used in multiple centres and situations to have a meta science.

2. The singer/therapist is available in one hospital or situation only. No one can expect him to be available to all the listeners except a few lucky ones. But the voice can be used/prescribed with specific needs of each patient and thus made available to all.

Unless this selection of the musician/voice is done with utmost care, the results of the project may not be as perfect as we expect.

Both therapist and musician should first become aware of the spiritual power of what they are doing together as a message to the posterity. This probably is the greatest challenge to be faced by every researcher exploring into the spirituality of music and into *nādalayayoga* as a part of which emerge *cikitsa* or music therapy.

The voice as an indication of the human condition (pp 83-85 D. Aldridge)[110]

Contingent upon the role of singing in comfort is the power of the voice to reflect internal states. It is the voice that most quickly communicates the physical and emotional condition of the

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[110] *Music Therapy in Dementia Care*, edited by David Aldridge. Jessica Kingsley Publishers. 116 Pentonville Road. London NI 9 JB. Page 83-85, The voice as an indication of the human condition.

individual. The verbal content augments the message. The full spectrum of the human condition is therefore evident in the sound qualities of the voice which range from indications of physical and emotional states contentment, exuberance, etc. while exact interpretation of an individual's vocal quality remains at issue until the full range of the particular individual's responses are known, there is clear and immediate indication of the response direction and also its intensity.

The communication of internal states through the voice has its basis in the vocal anatomy and physiology. It is dependent on the larynx, the sound making mechanism in the throat, that is comprised of movable cartilage which changes with musculature to alter the length thickness of vocal folds. This function is contingent upon emotional disposition, physical tension, alignment of the body, position of the neck, etc. which affect the respiratory capacity and control, the amount of force of air through the vocal folds, and the shape and size of the resonating chamber. Collectively, all these influence vocal quality, according to Gauthier (1992).[111] When an individual is in a state of well being, he/she is in a well aligned posture (*sukhāsanam* in Gita) and head is erect. The air is drawn deep into the chest cavity with proper diaphragmatic breathing. The vocal chamber is in optimal position which allows good resonance and optimal frequency. The voice therefore sounds at a higher pitch, and utterances have longer durations than during low mood conditions. Vocal sounds in this condition may even have a certain singing quality (while talking). The voice thus gives a good indication of how well an individual feels emotionally, physically and spiritually. This indication is really apparent, and everyone is familiar with times in their lives when they were asked "how are you" and responded with, I am fine. Then to have as a counter-response

111 Gauthier D. (1992): Vocal education: A short chorus. Music therapy perspectives, 10.105-109.

"you don't sound fine." Chances are quite good that the counter-response was accurate even if the conversation occurred over a telephone without visual cues to provide information that identifies individual's positive or negative states that can either support or refute the individual's verbal content.

Because voice indicates internal condition of the individual, therapeutic intervention with voice as the medium can function not only to alter negative or undesirable conditions but also to maintain and further develop positive desirable conditions. Therefore, the music therapist must know the power of voice, use the most powerful and soft voice and music with positive emotional and spiritual content of love and harmony and peace.

For this, one has to design a goal-directed intervention designed to enhance the individual's condition

In dementia care, it is not what you do, but the way you do is important. And not what you say, but the way in which you say is important. The way in which you sing and what you sing are important from the point of view of your client and your profession.

An autobiography, a story telling, history, lingering of a melody which you heard in childhood are related to memory. Dementia people have lost that link. They have a chirotie illness and cannot make a decision and act in time (chronos is time measured and chiros is the right moment. The localized space related activity. They have lost that). Hence, to rewind their memory you have to use the music which they liked when they were not demented. For this, you have to know that. The client may not have lost the earliest memories and if that is kept up, stimulated, we can help them. So also the symbolic communication, like a loving touch, smile, etc. For these, you cannot prescribe a cassette or a complicated *rāga*. The relatives and family members should be instructed in this matter.

A visit to a Alzheimers day care centre will give you an insight about this. You cannot cure the disease but you can help

them have a quality life. At the end of the book, the story of a dutiful son who gave music to his demented father is given as an example. Sharing your musical memories and MLP with your children and grandchildren may help you in old age.

Related books suggested

1. *Music Therapy Research and Practice in Medicine from out of the Silence*. ISBN 1 85302 286 9. D. Aldridge.
2. Aldridge, David: *Music Therapy in Palliative case: New Voices*. London, Jessica kingshy | 1998.
3. Pelvic, Mercedes, *Music Therapy in Context: Music Meaning and Relationship*, London. Jessica Kingsley, 1997.
4. *Clinical Applications of Music Therapy in Psychiatry*, Tony Ingram and Jos de Backer.
5. Andsel, Gary: Music for Life: aspects of creative Music Therapy with Adult Clients, London: J Kingsley Publishers, 1995.
6. Aldridge, David: *Spirituality, Healing, and Medicine: Return to Silence*. London: Jessica Kingsley Publishers; 2000.

11

Music Therapy-Research Methods and Project Planning Training

Conducted at Pankajakasturi Ayurveda Medical College, Kattakada, Trivandrum.

(From 8.4.2006 to 10.4.2006) Inaugural function.

1. The informal introduction by participants.
2. A short concised questionnaire was given before the session to assess what they know of music therapy and from where and why they are interested to undergo this session of training. They were asked to draw a small family tree (GENEOLOGY) to assess family genetic background for music and the learning/learned skills of music and the professional status asked.
3. There were 25 participants (3 males, 22 females) and 10 observers and 4 were extra, total 39 people.
4. The participants were divided into 5 groups for small group discussions and project planning activities and named as,

   Group A.

   Group B.

   Group C.

   Group D.

   Group E.

First lecture was on the principles of medical/clinical research and how to make a project plan to be submitted to the supervisors/guides before it is approved. Power point presentation was used to illustrate the points. Explained in detail the different types of research methods, double blind studies, RCTs and the legal implications and the need to have consent in both mothertongue and English.

How to elicit MLP by informal interview was demonstrated. Asked the participants to prepare the project individually and to discuss and finalise the project with their group members and make a written project and one among the group to present it in front of all, so that others can raise their doubts and get clarification/or give their opinions for modifications/additions etc. This is to encourage group dynamics and healthy academic, scientific small group discussions.

The handouts distributed included:

1. HARS scale for stress/anxiety rating.
2. Pain scale
3. Consent form in 2 languages.

The procedures charts and questionnaires were distributed to them to make their learning process easy.

9.4.2006.

The first session from 9-10. Small group discussion of group members and project planning.

Projects chosen by the 5 groups.

1. Music therapy for professional stress.
2. Music therapy on paralytic patients with special reference to mental depression.
3. Alzheimers dementia.
4. Music therapy for cardiac patients.
5. music therapy for hypertension.

(Of these three were approved)

The group members were clearing doubts and asking questions, contributing their comments and opinions very freely and actively.

This continued till 11 in the morning.

Then an audio of Yesudas, voice without accompaniments except a *tambura*, was played and the participants were asked to give their written feedback. The results were good. The visualization of music was perfect (100%) and the participants identified the voice and music with the mother's lullaby, to nostalgic feelings of a loving father, to the village where a temple and its quiet surroundings exude *śānti*, to a quiet river, or lake, with lushgreen nature, and a soft breeze.

How to listen to music with your emotional aspect dominating is the crux of music therapy. The students had that faculty.

The practical session of eliciting the MLP from a patient through an informal interview and also finding out the musical preferences by singing together was then carried out. Since the students were not yet ripe to have real patients at their hands, they did the role play of a music therapist of the patient and demonstrated the informal interview for MLP and musical preferences. The flows in it were demonstrated and a few examples shown after the session. After this role play demonstration, the second lecture with power point presentation, elaborating on the most important aspects of project planning was done.

How to measure pain with different scales, what is a scale? How the pre-test and post test values should be drawn? What is the statistical significance? Why Metanalysis (of different studies by 2 reviewers) is done? How the confounding factors can be minimized and how we have to do literature survey? the importance of computer literacy to get references etc. stressed.

QOL and RCT were discussed.

(Metaresearch using pre-test, post-test, two group design, principles of unbiased, relevant, reliable assessment were stressed).

The title, the listing of authors in chronological order, writing an introduction, an abstract, and the aim of experiment, the materials and methods, were discussed in detail. The materials and methods—infrastructure you need, the facilities, the tools, equipments, personnel and the approximate cost etc. come in the materials.

The scientific methods, the different types of scales, questionnaires, the ways of data collection you employed, lab test etc. come under methods while chemicals, equipments used etc. should come under the materials. All these were given in the most simplified terms so that there is no confusion among the students who do not belong to the clinical/medical/scientific community (most of them were music students).

Afternoon was given entirely to the participants to show their talents in singing. The atmosphere suddenly changed to one of lightheadedness and humour, laughter and fun from science and education to art and lively humour of life. There was a shifting mood from the elated *bhakti* ecstacy mood to a lighter *śṛṅgāra* one, and everyone seemed to shift from heaven (*svarloka*) to earth (*bhūloka*) with the *śṛṅgāra padam*s sung by many participants.

Questionnaire in 3 parts (to be filled in by client, physician and music therapist) was distributed among the participants for future use.

On 10.4.2006.

1. Prayer from *Viṣṇudharmottarapùrāṇam (mohanam).*
2. Lecture: The principle of *melakartarāga* in music therapy.

3. The *bhakti bhāva* and creativity in Indian aesthetics. The lecture was on *bhakti* and emphasized the role of the student's *karma* with perfect *gurubhakti* and devotion to God. The *rasa* theory and *sandhyābhāṣa* were explained.

4. Summing up and recapitulaton of what is said about project planning followed (power point).

5. A written questionnaire was given (15 questions) to assess the student's feeling about the sessions, how useful it was to them. But also to assess the educational psychology of the group and the educational psychology of the individuals of the group and to compare with other groups.

6. *Navaśaktināyaki amman pādal* of Yesudas was played to demonstrate how *Bhaktibhāva* can bring the aesthetics (*rasa*) and how *rasa* is the same experience as *Brahma*. Every participant enjoyed and got immersed in it and there was 100% silence and *asabdabhava* (assessed by written feedbacks).

7. Visit to the ward.

A patient with Laryngeal carcinoma with multiple secondaries in terminal stage, cachexia, pain and palliative-on morphine was visited.

How silence and soft speech are necessary at such situations and how it is different from the demonstrated music preference session on a normal individual was demonstrated to one selected student. How softly we should touch a patient-as if it is a child.

How important it is to teach that touch to relatives, bystanders and caretakers like nurses.

How to instruct them to use devotional music at a very low volume and to keep silence so that they are not disturbed (with no MLP or musical preference elicitation). How different is the methods depending upon the real life situation, individual patient, severity and type of disease etc. explained to the whole group.

Afternoon session: distribution of certificates. Dr Priya and Prof. Omanakutty talked about the sessions. Those who didn't get chance to sing yesterday sang so that 100% participation from all the participants was ensured.

The day ended with a very very positive note and everyone was happy with a combination of *jñāna, bhakti* and the future anticipation of *karma* (that is carrying out the submission of the project plan after necessary modifications to Dr Suvarna after one week, getting it approved, and then finishing the project and reaching the endpoint of the desired goal). The conclusion was with the *omanatinkalkidavo,* the lullaby of Irayimman Thampi sung by Dr. Omanakutty Amma. And towards the end of the programme as if mother nature was pleased with the whole programme, she took the beautiful colour of Viṣṇu, and dark clouds accumulated in the sky, great rumblings and thunder peeled as if *Pāñcajanya* and *śārṅga* were active, and finally a few nectars from Dhanvantari's *amṛtakalaśa* fell. The parched earth was cooled.

Analysis of Feedback (10.3.2006) 35 papers evaluated

1. What do you feel about your awareness of Music therapy?

   Any alteration from what you had before the session?

   (answer in 2 0r 3 sentences only.

All the 35 feel that they have gained more information than they had before the session(100%).

2. Do you feel a genuine interest in pursuing the music therapy research and treatment?

   A. Yes(35)(100 %).
   B. No.

3. Which of the following do you think best?

   C. group discussions/problem solving (2)
   D. lectures (2)
   E. self study (1.)
   F. combination of all these. (35)(85%)

4. Teachers were inside classroom,
   G. friendly (23)
   H. approachable, (12)
   I. strict and rude, (0)
5. Outside classroom the teachers were
   J. not ready to talk
   K. unapproachable
   L. do not care for students
   M. do not have involvement in subject
   N. (30 did not write not applicable) 85%.
6. My (the student's) behaviour in class was
   O. Attentive (34)
   P. sleepy (0)
   Q. bored (0)
   R. could not concentrate (0).
   S. talkative with neighbours, disturbs them (0).
7. Response of teacher to my behaviour in class
   T. does not pay any heed (5)
   U. tolerates (5)
   V. gets angry (0)
   W. takes it easy, calm, with sense of humour (25).
8. What was your listening technique in class?
   X. Marginal listening (words reach ears do not linger in mind) (0)
   Y. Attentive. (can grasp, forgets after a while) (2)
   Z. Projective (can grasp, correlate, imagine a real life situation, and hence can remember) (33).
9. Are the following essential for MT teaching?
   a. Audio-video (1)
   b. Problem solving with human subjects
   c. Both (34)

10. Is the time of the study course given
    e. Optimum? (2)
    f. More than required? (2)
    g. Less than required? (30)
11. Would you have liked to get some more hours of teaching, practical training, interaction?
    h. A. YES (35)
    i. B. NO
12. Which is more ideal?
    j. A. group assignments? (31)
    k. B. individual assignments? 13 (first group and then individual according to one participant)
13. In group assignments, how many of your group members were contributing actively?
    l. Specify the number
    m. names (the answers were not given)
14. Behaviour of group members in general was
    n. silent (3)
    o. negative comments (0)
    p. positive comments (3)
    q. actively participating (22).
15. The following qualities are essential for teachers (if there are more than one quality you like in your teachers, just number them on the right hand side)
    r. welldressed
    s. humble, meek.
    t. mature, honest
    u. deep knowledge in the subject taught
    v. Intelligent
    w. pronounciation of English language superb
    x. lack of self consciousness
    y. responsibility to control class orderly

z. strong social, clinical sense
a. experience in subject
b. integrated personality and creativity
c. moral responsibility to students and society.
d. love to students, and to humanity in general.

The three project plans submitted by the students at Pankajakasturi and accepted are given in the next chapter:

1. Meera Ramdas
2. Sudha Ganesh
3. Dr Bhuvaneswary.

12

Three Projects Submitted by the Students

Project Plan

1 The Value of Music Therapy in Diabetes Mellitus and its Complications

Author: Meera Ramdas

ABSTRACT AND INTRODUCTION

Diabetus Mellitus is a metabolic disorder due to deficiency or ineffective action of insulin which is produced by the beta cells of the islets of langerhans in the pancreas. The predominant type of this disorder is the Type II diabetes, which constitutes about 85% of the diabetic patients and starts in later adult life. Type I diabetes occurs predominantly in the younger age group and is due to the destruction of the beta cells probably by an auto immune process or virus infection. Diabetes has been increasing in alarming proportions, especially in the Asian population and with it the numerous complications which affect the entire human body.

The most important management of this condition is life style modification apart from the medicines. This involves dietary modification, reduction of weight, reduction of stress and proper monitoring.

Diabetes affects the bigger as well as the smaller vessels of the body and thus affects all the vital organs. The purpose of the study is to assess the value of music therapy in reducing the progression of the disease and help in better control and also produce a sense of well being and optimism which is most vital.

Aim

This study aims to effectively control both Type I and Type II diabetes with music therapy. We plan to approach the patient in a holistic manner. The patients will be on regular medication. We would like to find out whether the patients who receive music therapy are able to control diabetes more effectively than those who do not receive the same. Our therapy intends to bring about an overall improvement in the patient – both in the physical and mental state.

Materials and Methods

Our hospital runs a diabetic clinic in which there are facilities for all the necessary investigations which are routinely done in the management of diabetes objectively.

A well equipped lab which facilitates the estimation of blood sugar, GTT, HbA1C, serum electrolytes etc.

To check whether the heart is affected – ECG, Echo Cardiogram and all the associated investigations for blood parameters like serum lipid profile.

To check whether kidney is affected – blood investigations like blood urea, serum creatinine, creatinine clearance, micral test which assesses micralbumin urea which is predictor of neuropathy as early as five years in advance.

Biothesiometre – for assessment of peripheral neuropathy.

Doppler studies – Both peripheral as well as carotid Doppler.

Smoking cessation clinic – This acts in collaboration with the Sree Chithrathirunal Institute, Trivandrum.

Daily classes for both out patients and in patients on the various aspects and complications of diabetes mellitus.

Presence of podiatrist, dietician and also a clinical psychologist with regular classes in stress management.

Methods:

We plan to proceed the study by taking two groups each consisting of 15 patients:-

1. Fifteen patients those who will undergo music therapy.
2. Fifteen patients those who will not be given music therapy.
3. A well equipped consulting room with a cot, CD and cassette players, CDs, cassettes etc.
4. Repeated counselling sessions with each patient to study their problem in detail, to get an idea about their family history and to know about their taste in music.
5. Giving an assortment of *rāga*s to each patient (both light and classical songs) advising the patient to listen to these *rāga*s for atleast half an hour in the morning and evening according to their convenience.
6. Patients will be asked to give regular feed backs. All the tests will be done regularly to monitor the changes.

Cost:

As the hospital has all the facilities mentioned above, significant expenditure will have to be made only for the purchase of CDs and Cassettes. The cost should approximately be between Rs. 3,500/- and Rs. 5,000/-.

2. Music Therapy on Professional Stress Prepared and presented by Sudha Ganesh

Introduction

Music has a tremendous relaxation effect on our mind as well as our body. Modern therapeutic science says that music has a massaging effect on our brain. Music therapy is gaining more

and more grounds in the treatment of various disorders. The resonative effect of music enables the patient to thread back to normalcy or original state of mind. Music is a significant mood-changer and reliever of stress, working on many levels at once.

The word "Stress" is defined by the Oxford Dictionary as a "state of affair involving demand on physical or mental energy." At one point or the other everybody suffers from stress. In today's lifestyle management of stress plays a very vital role. Systematic living, structured working and living habits works to a large extend eliminate stress.

Stress is found in various age groups in different forms.

a. 0- 5 years - toddler stress
b. 5 -10: - entering the school
c. 10-22: - educational stress
d. 22-55: - professional stress
e. 55-65& beyond: - old age stress

Stress can cause headaches, eating disorders, allergies, insomnia, backaches, hypertension, asthma, heart ailments and even cancer. Professional stress is a chronic disease, relatively new phenomenon of modern lifestyle. It posses a threat to physical health. Typical symptoms of professional stress can be :

a. Insomnia
b. Loss of mental concentration
c. Anxiety, stress
d. Absenteeism
e. Depression
f. Frustration
g. Extreme anger
h. Family conflict
i. Physical illness such as heart disease, migraine, headaches, stomach problems and back problems

Professional stress is found in people in the IT sector commonly referred to as BOSS- (Burn Out Stress Syndrome), in entrepreneurs and other professionals who work for longer durations under stressful conditions. This is more prominent among employees in call centres and BPOs (Business Process Outsourcing). The basic reason being lack of physical exercise, extended working hours, loss of sleep and appetite due to abnormal working hours all lead to professional stress. Basically the demand for better output under very limited resourcefulness is the reason for development of stress.

Reference Sources:- Internet, "The Hindu" dated April 12, 2006 (Opportunities).

Materials and Methods

Materials

a. Collection of CDs and cassettes including music in different languages, instrumental music, chanting hymns of different religions, sounds of nature, folk songs, devotional songs and film songs in various languages.

b. Tape recorder and CD player

c. Earphones

d. Calm room with all facilities like fan, bed, table, chair, books and periodicals.

e. Design a questionnaire.

1.Questionnaire:-

Name

Age

Sex

Educational qualification

Professional qualification

Profession

Nature of work

Duration of work

Place of work

Description of work station – interface

a. with the computer

b. with the workers

c. with a team of professionals

d. with public

e. with patients

d. with beaurocrats

Description of stress condition (will be elaborated as given in the 2 tables with the references. See below):

a. Physical pain

b. mental disorders

c. psychological imbalance

Ref 2. How to assess insomnia) (Sateia MJ, Nowell PD. Insomnia. Lancet. 2004; 364: 1959-1973)

Table 12.1

Assessing Insomnia Complaints (lack of sleep)

Stage of Assessment	Goal	What to Look for
Initial screening	*Identify the nature of the sleep complaint*	Is there difficulty in initiating or maintaining sleep? Experience early awakenings? Is sleep non-restorative?
	Determine the presence of daytime consequences	Daytime consequences are required for a diagnosis of insomnia
	Determine the frequency of the complaint	Chronic insomnia: 2-3 nights/week

	Duration	>/= 1 month suggests subacute or chronic insomnia
Additional history: Precipitating factors, course, and progression of the disease	*Factors that alleviate or exacerbate the complaint*	Is the complaint worsened by stress or medical/psychological factors? Is it easier to sleep away from home, or when not trying to sleep? Is there a conditioned arousal in response to trying to sleep?
	Sleep-wake schedule	Information from sleep log: Is there evidence for phase advance or delay, or irregular patterns? Does the patient do shift work?
	Other nocturnal symptoms or events	Nightmares, terror, panic, parasomnia (and other behavioral), headache, pain, reflux, nocturia, night sweats, hot flashes, sleep paralysis, hallucinations.
	Associated behaviours	Physical, emotional, or cognitive overactivity before sleep; nocturnal waking behaviours (prolonged time in bed without sleep); food or substance ingestion just prior to sleep.
	Sleep-related thoughts	Negative expectations ("I'll never be able to sleep") Distortions -- erroneous assumptions about sleep needs Creating catastrophic scenarios around sleep loss.
Previous treatments: Responses and attitudes	*Assessing for precipitating or causative factors*	Psychiatric disorders: mood, anxiety, or other psychiatric disorders. Substance misuse or medication use: bronchodilators, steroids, diuretics, stimulants, antihypertensives, activating antidepressants, hypnotic rebound

Dr Suvarna Nalapat

		Medical/neurologic illness: chronic pain, nocturnal headache, gastroesophageal reflux disease, chronic lung disease, nocturnal angina, congestive heart failure, end-stage renal disease, cancer, HIV/AIDS, menopause, dementias, stroke. Sleep disorders: obstructive sleep apnea, PLMD, and other movement disorders.

Adapted from: Sateia MJ, Nowell PD. Insomnia. Lancet. 2004; 364:1959-1973

Table 12.2

Non-pharmacologic Treatments for Insomnia

Stimulus control therapy	*In bed only when sleepy and maintain a regular schedule*. Avoid naps and use the bed only for sleep. When unable to sleep within 20 minutes, get out of bed and engage in a relaxing activity until drowsy, then return to bed. Repeat as necessary.
Sleep restriction	Keep a sleep log, and determine the mean total sleep time for a baseline period. Start staying in bed only as long as the baseline mean total sleep time, but not less than 4.5 hours. If sleep efficiency is above 90% for 5-7 days, increase time in bed by 15 minutes. If sleep efficiency is under 80%, decrease time in bed by 15 minutes. Repeat adjustments every 5-7 days.

Sleep hygiene	Maintain a regular sleep schedule, and do not nap, especially close to bedtime. Avoid sleeping in after a bad night's sleep. Avoid watching the clock, and do not lie awake in bed for long time. Restrict excessive liquid intake or heavy evening meals. Exercise regularly, but not within 3-4 hours of bedtime. Minimize or avoid caffeine, alcohol, tobacco and stimulant intake.
Paradoxical intention	Deliberately attempting to remain awake to reduce performance anxiety.
Progressive muscle relaxation (Music therapy helps this)	Alternately tensing and releasing muscles to facilitate relaxation and inhibit anxiety-associated arousal.
Biofeedback: Electromyography, electroencephalography, and others. These methods have had limited application and assessment.	Electromyography: muscular biofeedback with a treatment rationale similar to that of progressive relaxation. Electroencephalography: theta or sleep spindle feedback
Cognitive therapy (music therapy helps this)	Restructuring an attempt to identify maladaptive and distorted thoughts that are common among those with insomnia, and replace these attitudes with more beneficial beliefs.

Multicomponent strategies (we are using MT as part of a multicomponent strategy)	Most approaches used now involve combinations of treatments, usually including sleep hygiene and stimulus control, sleep-restriction therapy, or both. Cognitive therapy and progressive muscle relaxation may also be part of the combination.

Adapted from: Sateia MJ, Nowell PD. Insomnia. Lancet. 2004; 364:1959-1973

Hamilton Anxiety Rating Scale (HARS)

The Hamilton Anxiety Rating Scale was designed to assist the physician clinical psychologist psychiatrist in evaluating each patient as to his/her degree of anxiety and pathological condition. Total HARS score in general, the higher the total score of the patient the more severe is his/her anxiety. Assignment of an anxiety level to a particular HARS score may be difficult because of rating variations between physicians. Nevertheless, the total scores are useful for monitoring the progress of patients through periodic reassessment with this scale.

Table. 12.3

HARS SCALE

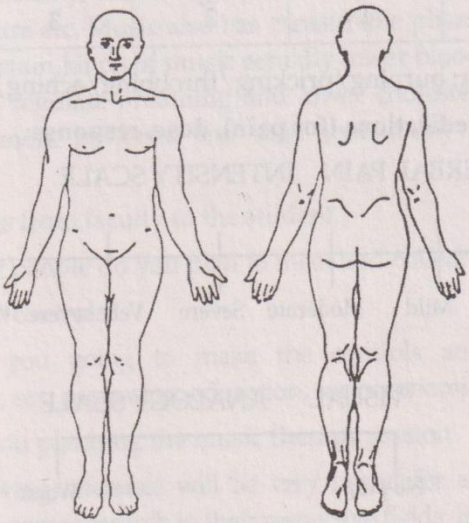
Rating 0 = Nons
1= Mid
2 = Moderate
3= Severe
4= Severe, grossly disabling

Item	Symptoms	Rating
Anxious mood	Worries, anticipation of the worst, fearful anticipation, irritability	
Tension	Feelings of tension, fatigability, startle response, moved to tears easily, trembling, feelings of restlessness, inability to relax.	

Fears	Of dark, of strangers, of being left alone, of animals, of traffic, of crowds.	
Insomnia	Difficulty in falling asleep, broken sleep, unsatisfying sleep and fatigue on waking, dreams, nightmares, night terrors.	
Intellectual (cognitive)	Difficulty in concentration, poor memory.	
Depressed mood	Loss of interest, lack of pleasure in hobbies, depression, early waking, diurnal swing.	
Somatic (muscular)	Pains and aches, twithings, stiffness, myoclonic jerks, grinding of teeth, unsteady voice, increased muscular tone.	
Somatic (sensory)	Tinnitus, blurring of vision, hot and cold flushes, feelings of weakness, pricking sensation.	
Cardiovascular symptoms	Tachycardia, palpitations, pain in chest, throbbing of vessels, fainting feelings, missing beat.	
Respiratory symptoms	Pressure or constriction in chest, choking feelings, sighing dyspnoea.	
Gastrointestinal symptoms	Fifficulty in swallowing, wind, abdominal pain, burning sensations, abdominal fullness, nausea, vomiting, bordorygmus, looseness of bowels, loss of weight, constipation.	
Genitourinary symptoms	Frequency of micturition, urgency of micturition, amenorrhea, menorrhagia, development of frigidity, premature ejaculation, loss of libido, impotence.	
Autonomic symptoms	Dry mouth, flushing, pallor, tendency to sweat, giddiness, tension, headache, raising of hair.	
Behaviour at interview	Fidgeting, restlessness or pacing, tremor of hands, furrowed brow, strained face, sighing or rapid respiration, facial pallor, swallowing, belching, brisk tendon jerks, dilated pupils, exophthallmos.	
	Hamilton, M., Brit J Med Psychol 1959, 32, 50-55. Total	

Table 12.4

Pain scale



Description of pain

Pain	Superficial/ deep	Intensity *	Character* *	Aggravated by	Relieved by	Affects sleep	Functional disability

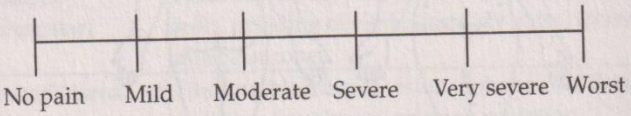
***Intensity**

None	Mild	Moderate	Severe	Excruciating
0	1	2	3	

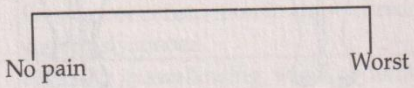
**Character: burning/pricking/throbbing/aching/shooting etc.

Current medications (for pain), dose, response:

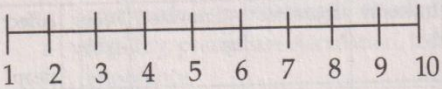
VERBAL PAIN INTENSITY SCALE



VISUAL ANALOGY SCALE



0-10 Numeric Pain Intensity Scale



Clinical Equipments

a. Counselling:- The person under stress should undergo a councelling session where he will elaborate his routine.
b. Identification of problem: To identify the problem, we are using the following tables (as mentioned above).
c. Analyzing the problem
d. Finding the route cause
e. Therapeutic treatment
f. Metabolic treatment
g. Re-scheduling the life style
h. Constant evaluation.

Because change is constant in life, stress is an integral part of it. Professional stress may be caused by a complex set of reasons such as job insecurity, technology, personal or family problems, workplace culture etc. Music also has measurable physical effects on the body, certain kinds of music actually lower blood pressure and heart rate, regulate breathing and lower cholesterol. Music can be much more powerful and safer than many prescribed drugs.

Suggestions from faculty to the student.

How many people do you plan to meet and collect data?

How many controls?

How are you going to make the controls and the test matching—age, sex, profession, education, socioeconomic status etc

How are you planning the music therapy session

(The following reference will be very useful for anyone who wants to do the same research in their respective fields, institutions).

Effects of job strain on Blood Pressure: A Prospective Study of White-Collar Workers

Chantal Guimont, MD, PhD; Chantal Brisson, PhD; Gilles R. Dagenais, MD, FRCP; Alain Milot, MD, MSc, FRCP; Michel Vézina, MD, MPH, FRCP; Benoît Mâsse, PhD; Jocelyne Moisan, PhD; Nathalie Aflame, PhD; Caty Blanchette, MSc

Am J Public Health. 2006; 96 (8): 1436-1443. ©2006 American Public Health Association, Posted 07/26/2006.

Abstract

Objectives: We evaluated whether cumulative exposure to job strain increases blood pressure.

Methods: A prospective study of 8395 white-collar workers was initiated during 1991 to 1993. At follow-up, 7.5 years later, 84% of the participants were reassessed to estimate cumulative exposure to job strain.

Results: Compared with men who had never been exposed, men with cumulative exposure and those who became exposed during follow-up showed significant systolic blood pressure increments of 1.8 mm Hg (95% confidence interval [CI] = 0.1, 3.5) and 1.5 mm Hg (95% CI = 0.2, 2.8), respectively, and relative risks of blood pressure increases in the highest quintile group of 1.33 (95% CI = 1.01, 1.76) and 1.40 (95% CI = 1.14, 1.73). Effect magnitudes were smaller among women. Effects tended to be more pronounced among men and women with low levels of social support at work.

3. Dementia-Alzheimer's

(Project plan of Dr Bhuvaneswary to be done at daycare centres for the elderly demented patients)

Table 12.5

Clinical dementia rating score (CDS)G Hughes etal.1987.

AREA ASSESSED	ATTENTION	COGNITIVE RESPONSES	
1. Cognitive function	attention	Cognitive responses	1.judgement 2.consideration 3.memory 4.recognition
2. Emotional	involvement	Emotional responses	Participation
3. Sensory &physical (motor including)	posture	Sensory responses	1.sight 2.hearing 3.touch 4.smell 5.taste

How to score the impairment level with CDR

IMPAIRMENT LEVEL	CDR SCORE
None(normal)	0
questionable	0.5
mild	1
Moderate	2
severe	3

Therapeutic choir and *bhajan* workshops for elderly

Singing is a means for both self-expression and self- fulfilment; songs reveal the subjectivity/inner existentiality of the being; and finally, the being's self-confidence instills in the participants expectations about the future. When dealing with the elderly people, the music therapist should reflect deeply on themes related to life and death, in addition to rethinking his/her relationship with time's multiple faces, and spiritual/devotional music is the best (for Third Age with sixty-five and older people). A music therapist is a professional who appeared in the second half of the twentieth century and who has both musical and scientific education. She/he seeks to improve the quality of life. Music therapy as a profession will be the recipient of more scientific recognition if clinical practice, research into such practice, and subsequent conclusions drawn mainly from theories and new questions arise from research, can the music therapist contribute to the prevention of the mental illness in the elderly? Directed towards the third age, can music produce therapeutic effects and/or actions? Which music therapeutic activities, techniques or methods are best suited for old age? Starting from a therapeutic education in music therapy and an existential theoretical humanistic reference, it is inevitable to regard each individual as someone who is full of possibilities to be developed, discovered or re-discovered. Organic cerebral syndrome (OCS) and depression being two of the most important disorders observed among a community's third-aged individuals, Veras (1997) explains: "OCS is understood as the compromising of such cortical functions as the memory, the ability to solve everyday problems, motor ability, speech and communication and the control over emotional reactions. There is no consciousness clouding ... Depression includes the nosological categories, major depression and dysthemia" (p. 17 - 18).

One of the motto of programmes for the elderly citizens should be "privilege of the elderly as the subject of the teaching-

learning process, placing emphasis on contents that prioritize their interests, motivations, accumulated experiences, life stories and social context" (Lacerda e Silva, 1997, p. 12)

Bhajan workshops and choir workshops for the elderly can be conducted for data analysis. The participants profile collected in one of the choir therapeutic workshop is as follows.

Table 12.6

Data from the Music Therapeutic Form (sample)

Question	Answer	percent %
Do you usually listen to music?	Yes	96
	No	4
How often?	Very often	74
	Not often	26
How do you usually listen to music?	Radio	78
	Tape recorder	30
	TV	35
	CD	39
	LP	30
	Live	26
	While doing something else	78
Do you listen to music?	With full attention	39
	Just listening	30
	Dancing to it	39
	Singing along	52
	Whistling	13
	Accompanying it an instrument	4
Have you ever had music lessons?	Yes	39
	No	61
Do you usually go to parties?	Yes	78
	No	22
Have you ever been to a concert?	Yes	91
	No	9

What kind of music do you like to listen to?	Vocal	65
	Instrumental	78
	Classical	22
	Gospel	65
What kind of music do you prefer?	Foreign	9
	Folk	35
	Popular	35
	Country	61
Do you pay attention:	To the lyrics	78
	To the song	48

Human activity is the basis of a person's knowledge and thought, that which builds the inner world as one acts upon and changes one's outer world.

This first essence stemmed from the phenomenological dimensions that bear close relationship with the doing, action or the singing act. The importance of joint musical making; the pleasure and satisfaction which involve the singing act; the knowledge of the voice (the speech system) as a musical instrument; and the openness to a new means of communication – singing.

When one of the participants says: "I was able to sing. Singing is my pleasure... at home I'm too reserved, but I fulfil myself here," pleasure and self-realization are evident. The songs revealing the inner subjectivity/existentiality of the being is related to consciousness, the human thinking. Consciousness, as a subjective product, takes place through an active process, which has as its foundation the activity over the world, language and social relations; it is how the person relates to the objective world, how one understands, changes it into ideas and images and establishes relationships between these pieces of information. Consciousness is not limited to logical knowledge; it also includes the knowledge of one's feelings and emotions, the knowledge of desire and the knowledge of unconsciousness.

Smith, Georgia H. "A Comparison of the Effect of three Treatment Interventions on Cognitive Functioning of Alzheimer's

Patients." Music Therapy – The Journal of the American Association for Music Therapy. Vol. 6A, No. 1. (1986). Pg. 41-56. For this study, 12 women aged between 71-92 were placed into groups of three. Each group received sessions of musically cued reminiscence (using familiar songs and questions to encourage discussion), verbally cued reminiscence (using questions to encourage discussion), and musical activity (using familiar songs without encouraging discussion). It was found that musically cued reminiscence and verbally cued reminiscence increased language scores, but only musical activities increased total cognition scores.

Two useful References on Dementia

Lipe, Anne W. "Using Music Therapy to Enhance the Quality of Life in a Client with Alzheimer's Dementia: A Case Study." Music Therapy Perspectives. National Association for Music Therapy, Inc. Vol. 9. (1991). Pg. 102-105. This case study examined a 69-year-old English woman who had played the piano when she was younger. Through the music therapy sessions, she was able to hum melodies after given the name of a song. Her general attitude was "brightened" and she was able to better express herself through music after the sessions.

Arnst, Catherine. "Songs that lead down memory lane." Business Week, October 6, issue 3547, (1997): 75. Location-journals microfilm. This article discussed Alzheimer's disease in elderly patients. It also described the effect of this disease on memories. However, in many Alzheimer's patients it is not the memories that are gone, but rather the ability to retrieve them. The study described the effectiveness of music for retrieval. It found that dementia patients could recall long-term memories after hearing familiar tunes. The study compared the outcome of memory retrieval in two groups, one that was oriented with music and the other with verbalization. Results concluded that music therapy is a valuable tool to enhance the quality of life for patients with dementia.

13

A Randomized Controlled Trial Done at Medical College Hospital

05-136 [OA] Music decreases dose requirement of sedative medication during colonoscopy: a randomized, controlled trial done by Harikumar R, Mehroof Raj, Antony Paul, Harish K, Sunil Kumar K, Sandesh K, Syed Asharaf, Varghese Thomas Department of Gastroenterology, Medical College Hospital, Calicut, Kerala.

Background: Music played during endoscopic procedures is found to alleviate anxiety and improve patient acceptance of the procedure. A prospective, randomized, controlled trial was performed to test the hypothesis that music decreases the dose requirement of midazolam administered during colonoscopy.

Methods: 78 patients posted for elective colonoscopy between October 2003 and February 2004 were randomized to receive either intravenous midazolam on demand (Group 1) without a zero dose or intravenous midazolam along with listening to music of their choice (Group 2). Dose of midazolam, duration of procedure, recovery time, pain score, discomfort score and willingness to undergo the procedures under same mode of sedation were recorded. For comparison of outcome variables between the two groups, Mann-Whitney U test was used.

Results: The dose of midazolam used in Group 2 was significantly less compared to Group 1 ($p=0.007$). Pain score was not significantly different in the groups ($p=0.128$). Discomfort

score was higher in Group 1, (p=0.001). Willingness to repeat the procedure under the same mode of sedation was not different between the two groups (p=0.981)

Conclusion: Music can decrease the dose requirement of sedative medication administered during colonoscopy [Indian J Gastroenterol 2005; 24].1

The use of music in medicine to promote relaxation has a long history.[112] Mention about therapeutic utility of music has been made in ancient Indian treatises like *Sāma Veda*. The role of music as an adjunct to treatment of various disorders is being investigated. Some studies suggest that music alleviates anxiety and improves patient tolerance during endoscopy.[113,114]

This randomized, controlled trial was designed to test the hypothesis that music decreases the dose of midazolam administered during colonoscopy and that it makes the procedure more acceptable.

Methods

Between October 2003 and February 2004, 78 patients scheduled for elective colonoscopy agreed to participate in the trial. Patients aged below 15 and above 60 years, those hard of hearing due to any cause, patients with overt/borderline psychiatric problems and those with considerable cardiopulmonary morbidity were excluded from the study. Patients were randomly allocated into two groups using computer-generated random numbers. Randomization and headphone placement were done by an MD

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112 Standley JM. Music Research in Medical/ Dental Treatment: Meta-analysis and Clinical Applications. J. Music Therapy 1996;23:55-122.

113 Bampton B, Draper B. Effect of Relaxation Music on Patient Tolerance of Gastrointestinal Endoscopic Procedures. Journal Clin. Gastroenterol 1997;25:343-5.

114 Palakanis KC, D. Nobile JW, Sweeny WB, Blankenship CI. Effect of Music Therapy on State Anxiety in Patients Undergoing Flexible Sigmoidoscopy. Dis Colon Rectum 1994;37:478-81

trainee who was not involved in further evaluation. Group 1 (40 patients) received 2-mg boluses of intravenous midazolam on demand without a 'zero dose' (medication not given in the beginning); Group 2 (38 patients) received midazolam in the same fashion and were also allowed to listen to music of their choice. Patients were allowed to choose from among the following 6 types of music – popular film songs based on Carnatic classical *rāga*s, classical music, devotional songs, folk songs, soft instrumental music and bioacoustics. Bioacoustics is soothing admixture of soft instrumental music along with nature sounds. Music was played using a walkman, (eg: Sony, Japan) and headphones. Headphones were used also in those not being played music.

Colonoscopies were performed by endoscopists who had done at least 200 full-length colonoscopies. Throughout the procedure, monitoring of pulse rate, systolic blood pressure (SBP) and diastolic blood pressure (DBP) was done using an electronic wristwatch BP recorder [Au: manufacturer? address?]. After the procedure, patients were monitored in the recovery room. The final assessor (recovery room nurse) was blinded to which group the patient belonged to. Dose of midazolam, duration of procedure, recovery time, pain score, discomfort score were looked for, in addition to willingness to undergo the procedure under the same mode of sedation. Episodes of hypertension (defined as SBP >140 mmHg, DBP >90 mmHg) hypotension (SBP <90), tachycardia and bradycardia pulse rate >100/min and <60/mm, respectively) were looked for. Pain score was assessed in a 0 to 10 visual analogue scale (0- no pain, 10- very painful); discomfort scoring was also done on similar lines. The recovery time was assessed by an independent recovery nurse until the patient was oriented in time, place and person and was able to serially subtract 6 from 100.

The study protocol was approved by the ethics committee of our hospital. All patients provided written informed consent for

participation in the study. The sample size was estimated based on a pilot protocol, including 20 patients and it was assumed that there would be a 25% reduction of dose of sedative medication if music was provided. Keeping p value at 0.05 and power of the study as 80%, it was calculated that at least 40 patients need be included in each limb.

Statistical analysis: Analysis was done using the non-parametric Mann-Whitney U test. The results are expressed as median with interquartile range.

Results: The two groups were comparable with regard to age, gender, educational and social status. The majority (n=75) underwent diagnostic colonoscopies for various indications (Table-1); three underwent polypectomies. The scope was passed up to the cecum in 69 cases. Three patients had malignant strictures that could not be passed; two cases in the music group and one in the control group had to be abandoned midway due to extreme non co-operation from the patient; all the three were patients with irritable bowel syndrome under follow up, who had recent change in pattern of symptoms. The three patients for polypectomy had undergone full-length colonoscopies earlier.

Most of the patients opted for popular film songs (34%), followed by bioacoustics (23%) (Fig.10). The incidence of tachycardia (57.9% vs. 55%), bradycardia (12.8% vs. 14.3%), hypertension (13.1% vs. 15.4%) and hypotension (7.3% vs. 5.8%) was comparable in the two groups. The mean pain score was not significantly different in the groups (p=0.128). The mean discomfort score was higher in Group 1 (p=0.001). There was no difference in the duration of procedure between the groups, while recovery time was longer in Group/(Table 2). The dose of midazolam in group 1 was more than that in the music group (Group 2); (p=0.007). Regarding willingness to repeat the procedure, equal proportion of patients in both the groups were ready to undergo the procedure under the same mode of sedation.

Discussion

Colonoscopy is the most uncomfortable and painful of GI endoscopic procedures.[115] Administration of sedatives and analgesics during colonoscopy carries the risk of arterial hypotension and respiratory depression. Most centres administer small doses of mild sedatives like midazolam, which has a short duration of action.

The beneficial effects of music therapy have been recognized for many years. Music has positive psychological and physiological effects and hence has been used for relieving stress associated with procedures/ interventions.[116,117,118] The role of music as an adjuvant to sedation for GI endoscopy has not been well defined. Palakanis et al[119] and Bampton[120] found that music alleviated anxiety and improved patient tolerance during endoscopy. Unfortunately, many studies lack scientific approach, are fraught with bias, and have methodological flaws like low patient numbers, lack of randomization or blinding and

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115 Rex DJ, Imperiale TF, Portish V. Patients Willing to try Colonoscopy Without Sedation: Associated Clinical Factors and Results of a Randomized Controlled Trial. Gastrointest Endosc 1999;49:554-9.

116 Hanser SB. Music Therapy and Stress Reduction Research. Journal Music Therapy 1985; 22:193-206.

117 Kaempf G, Amodei ME. The Effects of Music on Anxiety. A research study. AORN J 1989; 50:112-8.

118 Guzetta CE. Effects of Relaxation and Music Therapy on Patients in Coronary Unit with Presumptive acute Myocardial Infarction. Heart Lung 1989; 18:609-16

119 Bampton B, Draper B. Effect of Relaxation Music on Patient Tolerance of Gastrointestinal Endoscopic Procedures. Journal Clin. Gastroenterol 1997;25:343-5.

120 Palakanis KC, D. Nobile JW, Sweeny WB, Blankenship CI. Effect of Music Therapy on State Anxiety in Patients Undergoing Flexible Sigmoidoscopy. Dis Colon Rectum 1994;37:478-81

sedative/analgesic drugs given during the procedure not being taken into account while subjective parameters alone are compared.[121],[122] Moreover, investigator-selected music is used in many studies, which may not be apt since music is a highly subjective perception and hence patient-selected music would be better.[123],[124] The neurobiology of the effect of relaxation music on patient tolerance of GI endoscopic procedures is not clearly known, although a recent trial showed reduction in salivary cortisol level when music was played during colonoscopic examination.[11]

In our study, a reduction in the dose of midazolam was noted in the music group. Although pain scores were not significantly different between the groups, discomfort scores were less in the music group.

In conclusion, we demonstrated that music can decrease the dose requirement of sedative medication required for colonoscopy and decreases patient discomfort.

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121 Shiemann V, Gross M, Reuter R, Kellman H. Improved Procedure of Colonoscopy Under Accompanying Music Therapy. Eur J Med Res 2002;7:131-4.

122 Binek J, Sagmeister M, Borovicka J, Knierim M, Magdeburg B, Myenburg C. Perception of Gastrointestinal Endoscopy by Patients and Examiners with and Without Background Music. Digestion 2003;68:5-8.

123 Smolden D, Topp R, Singer L. The Effect Of Self Selected Music During Colonoscopy on Anxiety, Heart rate and Blood pressure. Appl Nurs Res 2002;15:126-36.

124 Uedo N, Ishikawa H, Morimoto K, , et al. Reduction in Salivary Cortisol Level By Music Therapy during Colonoscopic Examination. Hepatogastroenterology 2004; 51: 451-3.

Table 13.1

Indications for colonoscopy

Indications	Group 1 (n=38)	Group 2 (n=40)
Bleeding per rectum	11	14
Constipation	4	6
Anaemia under evaluation	3	2
Weight loss under evaluation	1	3
Lower abdominal pain	8	7
IBS with recent change in pattern of symptoms	9	7
Polypectomy	2	1

Table 13.2

Comparison of outcome variables between music and control group

Parameters	Control		Music		Mann-Whitney U value	P value
	Median	Interquartile range	Median	Interquartile range		
Pain score	7	2	4	2	615	0.128
Discomfort score	8	2	7	1	420	0.001
Willingness to repeat	1	1	1	1	758	0.981
Duration (min)	33.5	13.5	28	14.5	523	0.118
Recovery time (min)	20	10	10	10	356	0.001
Dose of midazolam (mg)	5	2	4	2	499	0.007

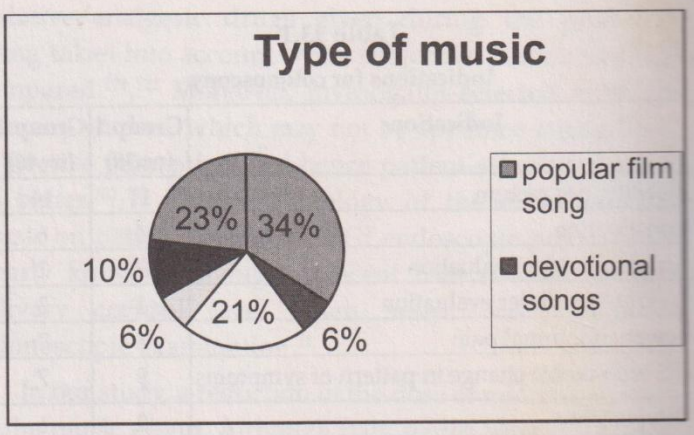

Fig 13.1 Pie diagram showing different types of music chosen by patients

This study is a proper RCT. But the only problem, from the side of musicology and music therapy is that the broad outline popular, classical, instrumental, bioacoustics does not give any specific information except that music has some role in reducing the dose of drug and pain (which is an established fact from the western researchers). To make the information more specific, I had enquired Dr. Varghese Thomas and Dr Harikumar about the specific *rāga* of the instrumental and devotional, classical, popular music given. Especially, since according to my findings, and the yoga principles of *Melakarta Rāga* scheme, the colon belongs to the *mūlādhāra* and the *mūlādhāra rāga*s would have been good for the reduction of pain at that site. The list of songs used by them was sent to me by Dr. Harikumar. To be precise, what they have used was 56% *rāga* based, 23% bioacoustics, and 21% folk (*mappilappattu*). Of the 56% *rāga* based songs, 46% were vocal, and 10% instrumental. All the 46% vocal were *mūlādhāra rāga*s, and among the instrumental, except *candrakaun* (*anahatam*) and *ṣanmughapriya* (*sadhiṣṭhānam*), all were *mūlādhāra rāga*s. In totality, 56% were *rāga* based and *mūlādhāra rāga*s belonging to the *mela* system). Please see Appendix for details.

14

A Case History of Alzheimer's Disease

(from a dutiful son. Mr Sudhir Nath)

Mr. Loknath. P, Male, 84, suffering from Alzheimer. He had a cerebral stroke in 1990 at Chennai. Initially he went into a situation where his speech and co-ordination were affected. He was treated by Dr. Logamuthu Krishnan, neuro surgeon, by medicines and traction. This continued for one year. The response was only partial and as his condition was diagnosed as Alzheimer, nothing more could be done. My father's memory was affected and his behaviour started becoming strange and irrational. Physically he could not even lift a cup of coffee, and his speech became impaired.

At that time a family of ours, an Ayurveda practioner, suggested Ayurveda treatment. Hiring a *'Pāthi'* we started *Dhāra* and Oil massage every day. This continued for 3 months. He did recover to the limit where he could walk on his own, but with difficulty, eat on his own and speak coherently. But he did tend to wander off in his thoughts and imaginations (hallucinating).

In the mean time my parents shifted to Trivandrum to be near my sister. In the preceding years Dad's condition started deteriorating rapidly. He lost his sense of direction, started urinating in public, arguing on trivial matters etc. His character became quite childish, being stubborn, sulking, refusing to go to

the bathroom etc. And started removing his clothes most times and developed a tendency to be nude.

Going back to the beginning of this letter, started playing music to him daily 3 weeks back.

The response was startling and even others who looked askance at my attempt started noticing the change. As I said before I have no medical or scientific training or knowledge in this subject. It was just a desperate attempt.

The music I played were –

1. Marvellous Marva by Pt. Shivkumar Sharma (*Rāga* Marva).
2. *Mohan Vīṇā* by Pt. Viswamohan Bhatt (*Rāga Yaman, Rāga Basant).*
3. Chaurasia's Choice by Pt. Hariprasad Chaurasia (*Rāga Ahir bhairav,* Multani, Kafi).
4. Evening *Rāga*s by Pt. Hariprasad Chaurasia (*Rāga Bageshri*).
5. The Genius of Pt. Ravi Shanker (*Rāga Kalyan, Yaman*).
6. Sundown *Rāga*s by Pt. Jitendra Abhishek (*Rāga Madhuvanti*, Dharbar Kannada).
7. Moon Magic by Pt. Hariprasad Chaurasia (Fusion of Indian, Indonesian and African music).
8. Singing Strings Vol. 4 By Pt. Giriraj – Sitar (*Rāga Lalit*) and Pt. Budhadev Dasgupta – Sarod (*Rāga Kaunshi, Kannada*).
9. Indian Classical on *Svarmaṇḍal* by Shrikant Thackerey (*Rāga Yaman, Patdeep, Madhuvanti, Bhairavi*).
10. *Kafi That* by Shruti Amonkar (*Rāga Hamsakinkini*), Kishori Amonkar (*Rāga Suha*) Pt. Harprasad Chaurasia (*Rāga Bageshri*).
11. Golden *Rāga* Collection 3 by Krishna Hangal (*Rāga Miyan ki Malhar*, Shankara).

12. Golden *Rāga* Collection by Pt. C.R.Vyas (*Rāga Dev Gandhar, Salang, Dhani, Bhairavi*).

13. *Saptarishi* by Pt. Bhimsen Joshi (*Rāga Patdeep*).

14. Music for Relaxation by Viswa Mohan Bhatt (Indian Fusion of *Mohana Veena*, Flute, Piano, Violin, Sarod, Sitar, Guitar, Keyboard, Tabla, Mridangam).

15. The Silent Path of a Vocal Genius – Kollegal Subramanyam (*Rāga Nata, Amṛtavarṣini, Cārukeśi, Nītimati, Revathi, Vasanta*).

All these I have only on audio tape form.

I have on CDs

1. Life Spring Happiness – Karunesh
2. Tales of a Dancing River – Prem Joshua
3. Collection of Ghazals, Persian & Indian improvisations – Ustad Shujaat Hussain Khan – Sitar & vocal – The Rain, Fire, Dawn, Eternity.
4. Relaxation Body, Mind & Spirit – Sambodhi Prem
5. Two cds, on Chinese music played on traditional instruments I play mostly the instrumentals on the audio tape as they are convenient to play on my portable audio stereo player.

Hope this will help you in your work. Please do send me any further information on this subject for my own knowledge and also to help others who are in this situation.

Thanking you

(This is a letter received from a dutiful son, who remembered what his father liked during his early years. The problem with the old age people and the new generation is that they do not know each other well probably due to lack of communication between them. In old age homes this is a major problem. Music can induce better communication and understanding between people).

15

Conclusion

In my music therapy protocol, I first try to create a musical environment suited for each individual as a unique person after assessing the personal life and musical preferences. Then, I give some basic and common *rāgas* as a base of the pyramid I later try to create with more specific *rāgas*. The second and third sittings are for giving specific *melakarta rāgas* for specific organbased diseases/*cakra*s associated and for harnessing the universal cosmic energy with the bioenergy field of the individual. This is an interdisciplinary and traditional approach and incorporates the objective scientifically recordable parameters for academic purposes. Music, like *Ayurveda*, is a way of life.

Information theory and cybernetics explains the formation and transmission, reception of messages, and reaction of the autoregulatory receivers (feedback) in communication and modification of existing and available systems of knowledge. In many basic research centres, musicians and doctors are trying to record the same *rāga* rendered by different musicians and to have the vibratory patterns compared with complicated computerized systems (one such is available in Bombay and another in Netherlands) in which the processing patterns and analysis are different. The computer system MMA (melodic movement analyzer, and FPE (Fundamental Pitch Extractor), are in Bombay in the national centre for performing arts. LVS is in the phonetics laboratory in the uviversity of Leiden. It uses sub harmonic summation algorithm (SHS) and advanced pitch receptor. Even if

we do not have access to these costly techniques and we have the problem of lack of funds, we can still proceed with the research in an objective scientific manner accepted by the academicians. I have adopted this method as my tool in music therapy research. The first step is to assess the aesthetic value of music which is repeatedly presented to different people, under different conditions and get feedback of association/feelings as data which is sustained for years. This can be done in a free way (without questionnaire) as we can do with a particular singer's music (in my research it is the music of Yesudas which has sustained for more than 40 years in four generation of people speaking different languages and following different religions and belief systems). Then we can confirm this by using a questionnaire on a definite number of selected people. This is called a guided way of assessing the aesthetic value. I have done this with the voice of Yesudas and found a 98% acceptance in Malayali population. We can get this with all the South Indian languages and with different religious, cultural and social groups of different age groups and sexes and even in North Indian populations, if someone try it there.

The second step of the investigation is using taped versions of the selected voice/music to one test group. The group should be age/occupation/social status controlled. Record the association/feelings by guided association for mutual comparability and with a restricted questionnaire. This has to be statistically proven. The pilot project done in Amrita Institute fulfilled these criteria. The subjective and objective analysis is to have reproducibility and testability. If there is facility we can give the same *rāga* of different musicians (taped) to different patients/same patient and use a double beam oscilloscope and camera to measure the findings. This is a basic research procedure but may not be useful for a real life situation where the patient and the doctor needs immediate results and not just research data accumulation at the cost of the patient's comfort.

The *rāgacikitsā* uses allopathy methods only for laboratory and clinical assessment of the effects of the method. The concept of one drug for one disease is not there in *rāgacikitsa* (one *rāga* for one disease) though most of the music therapy research is going on along these lines. All *rāga*s have healing powers. The basic of *rāga* music is the 72 *melakartarāga* from which we can derive all the *janyarāgas*. The challenge is to assess the individual patient based on his/her disease, *cakra* affected, musical background and cosmic origin and then to give a series of *rāga*s in a few sittings with a very informal relationship established between patients and doctors. At this level it is part of narrative medicine and of family medicine. There is no side effect at all for *rāga* therapy quite contrary to allopathy practice and that is why 100% of patients in U.S opt for this type of therapy in the hospitals.

Does *rasānubhūti* occur in plants and animals, who know nothing about the *rāga*? If so how can we demonstrate it by a very simple experiment? The following gives the research methods which can be done even by a child can be used as demonstration to pre-school age children also.

The problem identified:- What effect does music have on plant growth?

Research:- Use classical music and rock/heavy metal music to demonstrate.

Hypothesis":- Classical music help plant growth.

Material:- Three plants of the same type., 2 small stereos or boom boxes with CD players. A rock/heavy metal music CD, a classical music CD (we can also use the same *rāga* sung by different musicians).

Procedure:- Take three plants. Label them classical, no music, rock. Put them in separate rooms and play the respective music. The plant with no music is kept in a quiet room with no music. Water them daily and after one week, record the results (the other conditions for all the three plants should be controlled).

Record, analyse data:- After one week, assess the condition of the plant. Which of the three plants grew better? Which one grew least?

Such basic science experiments are not applicable to a very complex individual with different levels of consciousness and different environmental factors and emotional and sensory states and complex behavioural patterns, different metaboloic states and diseases, and yet we have to start from such simple experiments. These have already been done in the western world after Jagdeesh Chandra Bose did his famous experiments with plants. Now the task is to do applied research with real life situations using live patients and *rāga* based music in all hospitals and educational institutions and recording the data and analyzing them and interpreting them for future use.

Goals of *Rāgacikitsā*

1. To improve quality of life.
2. Physical, mental, intellectual and spiritual in normal people and in the diseased.
3. Educative and research tool.
4. Transformation of society.
5. World peace.
6. It should not become a quack method. Should have a proper university programme/course/syllabus/curriculum.
7. Music research and music therapy research are different. The music system in India is used for Therapy. The programme should be conducted in hospitals/clinics attached to a university (because patients are an essential part of therapy).
8. The best method would be to have a centre in a natural setting, and patients from various hospitals can approach the therapist there. The centre can have attachment with these hospitals/institutions.

9. Wholistic interdisciplinary approach, preservation of ancient *Guru-śiṣya* relationship must be there. A *gurukula* of music should be functioning in close association with the programme so that the students get the ancient traditional system of education, the university based research programmes and a hospital based availability of patients and laboratory data.

Research methods

1. Basic fundamental.

2. Tonal spectrum analysis (in Bombay and Netherland) and the use of a single *rāga* in a single disease. This is done by various centers at present in India mainly under the guidance of musicians and interested doctors/hospitals.

3. Applied innovative.

4. For doctors, the immediate application of the music in their patients with both subjective and objective assessment of the response is more important. The real life situations are very challenging. The data accumulaed by the applied innovative research can be documented and stored for future use and for research.

5. Transformative research.

6. The transformation of entire sections of society, nation and the world for better understanding and world peace and national integration.

In the process we have to,

1. State the problem we have to solve

2. Establish the role for doctors, musicians, laboratory staff etc.

3. Prove with a pilot project.

4. Declare the methodology adopted for each speciality (with discussions between the specialist and the music therapist).

5. Awareness programmes—lecture demonstration/books/ through media/personal communications etc.

6. Rethinking and taking part in the changing process.

7. Reflect on experiences, record the learning in relation to methodology, framework of ideas and areas of concern.

Role of Music Therapist is to Help the Patient

Music therapist should help the patient to express themselves through improvised or composed music that focuses on specific patient issues.

That will help to facilitate the expression of the patient's feelings related to here and now, his disease, his hopes, fears, his soft thoughts etc. Improvised or recorded music is to be used for relaxation and pain reduction. Music therapist has to facilitate interpersonal and intrapersonal communication through improvised techniques. They have to help the patients in coping with the disease through music. This improve the quality of life for the patient.

In a music therapy, group sessions can be audiotaped so that patients can hear them in and outside the sessions. Music therapy groups develop a positive trusting dynamic where patients are encouraged to explore new ways of self-expression and to experience greater self-acceptance when positive feedback follows. The familiar songs activate patients to move, sing, express their opinions more freely about various topics. Music is the facilitator of a process that incorporates established music therapy goals. Individual therapy sessions should be planned carefully and each patient should be assessed for his musical preferences and musical background. A preliminary questionaire and later on a few personal sessions with the music therapist has to be there. Only after this assessment, the therapist can prescribe *rāga*s for them. Lyric writing and *samasyā* are done to facilitate self-expression for patients who are cognitively intact but who have limited verbal ability. By writing lyrics the individual is able to develop a strong trusting relationship with the

therapist and can explore deeper and more meaningful forms of self-expression. This is the beginning of a therapeutic process for clients.

In Beth Abraham family of health services, there is a special group for younger populations. This is an open group and any young person can participate in it no matter what their musical skills are. Another music therapy support group for relatives and friends of patients also functions. Having a loved one who is sick and/or hospitalised is a stressful and emotional experience for the caregivers and relatives. In the music therapy group for these people, their feelings and experiences are shared and processed in a musical environment. The group provides help to caregivers to feel more in control of the process and facilitates emotional release, self exploration, and self expression through music. Techniques of music relaxation and stress reduction are taught in a nurturing and confidential environment. Both the patient and the caregiver are invited together to participate in the session. This will enhance communication between caregiver and the patient. Music functions as a bridge between patients and caregivers (relatives, doctors, nurses etc). The caregivers are to be given assistance to select the best musical tapes (*rāga*s) for their patients. Music therapist selects the *rāga* for the patient depending upon the disease, organ affected and the musical preferences and background.

Scientists and academicians at over 18 universities and clinical sites in the U.S and Canada are currently involved in music and brain functions research. These investigators and leading clinicians maintain that if specific responses to music can be mapped and linked to what is needed by patients to accelerate their healing we will find new ways to apply music prescriptively to hasten recovery. Such a research has enormous possibilities for millions of impaired people throughout the world.

Brain functions of the experience of music were assessed using imaging equipments. Emotional responses to music are

studied with psychological tests and physiological measures, blood pressure, hormone levels, skin responses, respirarory rate, electromyograms etc. Cognitive and behaviour scales were also used. Both qualitative and quantitative methodologies have been used. The question whether there is a separate music centre in brain is explored,? Processing of musical information is very complex. Music affects our neurological, physiological, physical functioning in the areas as learning, language processing, emotional expressions, memory, physiologiccal and motor responses.

The effect of music on stroke rehabilitation, effect of low frequency sound on spasticity and pain management, music therapy in enhancement of motor functions etc. have been established. Music has been used for recovery of nerve injury in neurodegenerative diseases. The possibility of music promoting the activation of exciting neural connections, establishing alternate nerve pathways that can be used to reestablish behaviour and/or facilitating reorganisations of structure and function of mature brain cells has been suggested. The effect of music on recovery of movement, especially the recovery of walking and dancing are being examined.

Music decreases the BMR (Basal metabolic rate) respiratory rate, decreases blood pressure, reduce anxiety, tension and depression, reduce pain by increasing the endorphin secretion, increase the production of hormones that increase the speed of healing and decrease the danger of infection. Music provides a creative outlet for the emotional concerns of hospitalised patients, encourages and enhances relationships with other people and family members, reduces the sense of isolation experienced by cancer patients, lessens stress and encourages relaxation. Patients can refer themselves to the therapist or referrals can be made by doctors/nurses/social workers. On designated days, the therapist see the outpatients and inpatients. A typical therapy session extends for 15 to 60 minutes a

maximum of 2 hours. The therapist/patient informal interaction is the most integral part of the session. Based on this the entire therapy is started. Get an opinion of the treating physician about which are the organs affected. This is to select the *rāga*s for the specific organs related to the *ṣaḍcakra*s. Get the date of birth and asterism so that we can use the specific *rāga*s originating from that part of the zodiac.

The intervention ranges from singing, playing rhythmic instruments, listening to recorded/live music, songs sung by the therapeutist and the patient together, engaging in relaxation exercises with background music, compose original songs, and doing yoga or physical exercise with appropriate BGM provided by the therapist. The family members and caretakers can join and share a meaningful and enjoyable time during therapy.

Group music therapy with *bhajan*s and march songs has been proved to give peace and boost morale of the participants respectively. Any type of classical music and melodies have a healing effect on the temporal lobe/limbic system.

When we use head phones, the difference between the two tones send to the two ears by stereo head phones. This is an electrical signal (not actual sound) perceived in the brain by both the hemispheres working together. Enhanced result is a focused whole brain state called hemispheric synchronisation, an optimal condition for improving human performance. Specific combinations of tone signals can help individuals to achieve laser like focus and concentrate. Different tone signals used to facilitate profound relaxation, expanded awareness or other desired states.

The theta state of 4 to 7 hertz increase the learning capabilities. Children spend more time in theta state than adults which explain the acclerated learning ability in children. Alpha frequencies are also useful for learning purposes. One can play soft classical/light music as a background while learning to get a

maximum effect of enhanced learning. Half an hour a day of the theta state can replace upto 4 hours of sleep. Once we practice *nādalayayoga*, hearing music for half to one hour in the *Brahmamuhūrta* with yogic concentration and preferably at night before going to sleep, we can reduce our sleep needs and thus get more energy and time for more quality work (mainly intellectual). This was what the yogis/sages of yore did. I have been practising this for years and have found it very rewarding.

Music improves your self-esteem, improves concentration, and give you more intellectual acumen.

Functional magnetic resonance imaging f(MRI) and biology of neurotransmitters are opening new horizons and addressing ever more sophisticated questions about human behaviour and tastes which define their culture. A combination of psychological surveys and f(MRI) seems to hold one of the keys to at least partially unlock the secrets of very complex human behaviours, such as falling in love or making moral judgements and critical decisions, enjoying a concert, writing a poem or giving an inspired lecture on spirituality. The biology of neurotransmitters, on the other hand, is revealing how mood disorders can be affected by drug treatment, how certain compounds seem to allow neurogenesis to occur in the hippocampus, or how our brains are wired for learning and memory. What in our brains make us choose between saving one old friend or two complete strangers from being overrun by a speeding car out of control? Will f(MRI) indeed provide us, in the future, with a connectivity brain map of the compassion or altruism that some of us might have deeply ingrained in our personalities? Or are they such fleeting moments for most people that almost no traces will be found? And let's assume we find a way to map altruism -- will we ask our prospective friends or mates to have a peek at their maps, just to know where we stand with them?

Long Term Goals of Music Therapy. (Ref Boxill, E. H. Music Therapy for the Developmentally Disabled. Pro-Ed, Inc)

To improve self-image and body awareness.

To increase communication skills.

To increase the ability to use energy purposefully.

To reduce maladaptive (stereotypic, compulsive, self-abusive, assaultive, disruptive, perserverative, impulsive) behaviours.

To increase interaction with peers and others.

To increase independence and self-direction.

To stimulate creativity and imagination.

To enhance emotional expression and adjustment.

To increase attending behaviour.

To improve fine and gross motor skills.

To improve auditory perception.

The Projects at allopathy (Amrita Institute of Medical Sciences Kochin) and *Ayurveda* (Pankaja kasthuri Ayurvedic hospital, Trivandrum) were done with such a broad vision of long term and short term goals in mind.

In Indian concept, *rāgacikitsa* is the use of *rāga* (*Rā* stands for *rañjayati* or unites by love, and *Ga* stands for the *gati* or *gamakasañcāra*. *Rāga* is uniting hearts with love and harmony through music) for removing *Rāgadveṣa* from hearts of individuals and making them healthy, perfect human beings with professional excellance in all spheres of life. And hence Indian music therapy is not just another method of curing diseases in a hospital situation alone. It is a preventive measure to all illnesses of individuals and society. By improving and perfecting individual personality and by keeping our physical, mental, intellectual, and spiritual health in excellance it works wonders in society and the world around. Indian Music that touches the very heart strings of individuals fills it with

compassion (not passion) and leads to peaceful coexistence of the seemingly diverse lifestyles and traditions. Music is a panacea for all illnesses of the world, and converts passions to compassion and anesthetic inefficiency to aesthetic professional excellance. It creates a unified community of world citizens making the age old dream *'Lokā samastā sukhino bhavantu'* a reality.

Therefore, this book recommends judicious use of music in educational, administrative and healthcare units and in families for alleviation of pain and solution of various problems derived out of passion and desire.

Appendix

Appendix 1: Songs and Rāgas used at Medical college, Calicut - (chap. 13)

VOCAL

1. Popular songs 34 per cent

Songs/music given to patients undergoing colonoscopy in Calicut Medical College

1. *Kattile pazhmulam (Kāmboji-Harikāmboji janyam. Mooladharam).*
2. *Nadabrahmathin. Kalyani (Mechakalyāṇi Mūladhāram).*
3. *Usākiranangal. (Malayamārutam Mūladhāram).*
4. *Kālamorajñātakāmukan (Natabhairavi (simhendramadhyamam) not Mūlādhāram.*
5. *Svapnangal (shahana-Saṅkarābharaṇajanyam) Mūladhāram.*
6. *Nīlagiriyude (Mohanam. Harikāmboji janyam. Mūladhāram (sung by* Jayachandran).

(Of the 6, five sung by Yesudas, one by Jayachandran. Only one is not *Mūladhāra*. All others are *Mūladhāra*).

Songs listed without specification so that *rāga* was not identifyiable.

1. A.R. Rahman, Tamil collections fast numbers recent last 5 collections
2. Meesamadhavan, For the People, Ishtam, Madhuranombarakattu, Mazha.

2. Devotional 6 per cent
3. Classical music vocal 6 per cent

(In these categories which *rāga*, which *kṛti/kīrtan* not mentioned).

4. Instrumental ten per cent

Hariprasad Chourasiya Chandrakouns (*Anahata*)

Dr N. Ramani Flute *śaṅkarābharaṇam* (*mūladhāram*) and *Bhairavi* (*Anahatham*)

Kunnakudi violin. *Hamsadwani śaṅkarābharaṇajanyam* (*mūladhāram*) and *Ṣaṇmughapriya* (*svadhishtanam*)

Arjun Sherjwal, Packwaj, Fazal, Qureshi, table.

L. Subramanian and Stephane Grapell, I fusion.

Jalatharangam Anyampatty S.Dhandapani

Vīnā P. Bharathy. Hamsadwani, Miśraśivarañjani, Nīlāmbari, Amṛtavarṣiṇi Mūladhāra *rāga* predominates

4. Bioascoustics 21 per cent

Soundscapes music today

Casettes from Mindpower Research Institute, Udaipur, Rajasthan.

Pure bioacoustics by Jean Rosche (USA)

5. Folk songs 21 per cent

Mappilappattu

Actual Analysis. Should be

Vocal 34+6+6=46 per cent *rāga* based. Instrumental 10 per cent *rāga* based

That is 56 per cent *rāga* based, 23 per cent bioacoustics and 21 per cent mapilappattu (folk)

Of the 56 per cent *Rāga* based Predominence of *Mūladhāra rāga*s seen. This is explainable since colon is an organ which is in the region of the *mūladhāracakra*. This study is a RCT, at the same time supporting the effect of *rāga* on pain relief, dose reduction (for medical knowledge), and the role of *rāga* based music (for musicologist) and *cakra* related effect (for *nādalayayoga* and yoga experts) and can be quoted as interdisciplinary.

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*(The list is partial.)

All the online journals and websites of Music therapy were refered from time to time from 1998 onwards.

The articles and professional competency determinants of the AMTA, articles from Voices, a world forum for music therapists, articles from *Music Therapy Journal, British Journal of Music Therapy* etc were extremely useful. So also references from the Nordoff Robbins, Farlow Music Therapy, Canadian Music Therapy Associations. Students, teachers and doctors are directed to read the guidelines in these online journals.

Appendix 3: Near Death Experiences.

Near death experience in survivors of cardiac arrest: A prospective study in the Netherlands (Lancet 2001; 358: 2039-45) Pim van Lommel, Ruud van Wees, Vincent Meyers, Ingrid Elfferich, The lancet, Vol. 358 December 15, 2001.

The cause of this experience and its after effects were studied in a prospective study of 344 cases, the demographic, medical, pharmacological and psychological data compared in patients whom had NDE and who didn't have it. In a longitudinal study of life changes after NDE, these groups were studied 2 and 8 years after.

Theories of origin:

1. Physiological changes in the brain. Brain cell death due to cerebral anoxia.
2. Psychological reaction to approaching death.
3. A combination of such reaction and anoxia.
4. Changing states of consciousness (transcendance) in which perception, cognitive function, emotion, and sense of identity function independently from normal body linked waking consciousness.
5. People who have an NDE are psychologically healthy, although some show non-pathological signs of dissociation.

The patients transformational processes are very similar after an experience of near death, and encompass life changing insight, heightened

intuition, and disappearance of fear of death. Assimilation and acceptance of these changes is thought to take at least several years.

Definition of NDE by these group of doctors as: The reported memory of all impressions during a special state of consciousness, including specific elements such as out of body experience, pleasant feelings, and seeing a tunnel, light, deceased relatives, or a life review.

Depth of NDE measured as (1) superficial, (2) core experiences and (3) deep experiences. If there is some recollection only it is superficial NDE. Core NDE can be including moderately deep and deep NDE and the very deep NDE with clear picture of the exact experience.

Table 1

Elements of NDE (frequency of 10 elements of NDE)

ELEMENTS OF NDE	FREQUENCY (n=62)
1. awareness of being dead	31 (50%)
2. positive emotions	35 (56%)
3. out of body experience	15 (24%)
4. moving through a tunnel	19 (31%)
5. communication with light	14 (23%)
6. observation of colours	14 (23%)
7. observation of celestial landscapes	18 (29%)
8. meeting with deceased persons	20 (32%)
9. life review	8 (13%)
10. presence of border	5 (8%)
Life change inventory questionnaire(2 year follow up)	
1. Social attitude Showing own feelings Acceptance of others More loving, empathic Understanding others Involvement of family	
2. Religious/spiritual attitude Understand purpose of life Sense the inner meaning of life Interest in spirituality	
3. Attitude to death fear of death belief in life after death	

4. Others interest in the meaning of life. Understanding oneself
5. Appreciation of ordinary things

People with NDE have a significant increase in belief in an after life and decrease in the fear of death compared to people who had not this experience. Depth of NDE was linked to high scores in spiritual items such as interest in the meaning of one's own life, and social items such as showing love and accepting others. Self assurance, social awareness and religious nature increased in all patients irrespective of NDE.

Table 2

Total Sum of Individual Life-Change Inventory Scores of Patients at 2 Year and 8 Year Follow up.

Lifechange inventory scores	NDE (23)	NO NDE(15)	NDE(23)	NO NDE(15)
Showing own feelings	42	16	78	58
Acceptance of others	42	16	78	41
More loving, empathetic	52	25	68	50
Understanding others	36	8	73	75
Involvement in family	47	33	78	58
Understanding purpose of life	52	33	57	66
Sense inner meaning of life	52	25	57	25
Interest in spirituality	15	-8	42	-41
Fear of death	-47	-16	-63	-41
Belief in life after death	36	16	42	16
Interest in meaning of life	52	33	89	66
Understanding oneself	58	8	63	58
Appreciation of ordinary things	78	41	84	50

The authors say that the medical factors cannot account for the occurance of NDE since all patients who are clinically dead do not have NDE.

Good short term memory is needed to remember the near death experiences (also for remembering sleep experiences, and for *nādalayayoga* experiences). Forgetting or repressing such experiences was not the reason for the people who have not reported NDE because even in those who remembered the first interview could not elicit the memory. With timepass, after 2 to 8 years follow up, they could remember the core NDE more clearly and they consisted only positive emotions, showing that the transient memory defects immediately after the episode were over and they can remember it more clearly after sometimes, if they survived. Women have deeper experiences than men. There is an inverse relation to foreknowledge of the NDE and frequency of NDE. Two scoring systems of NDE.

1. Ring's classification (Ring. K. Life at death. A scientific investigation of the near death experience, New york: Coward Mccann and Geoghenan, 1980).

2. Greyson's NDE scale (Greyson B. The near death experience scale: construction, reliability and validity. J Nervous Mental Dis 1982: 171: 369-75).

The denial of such experiences come from social rejection and ridicule. It is this social conditioning which causes NDE to be traumatic, although in itself it is not a psychotraumatic experience. As a result, the effects of this experience can be delayed for years, and only gradually and with difficulty is an NDE accepted and integrated. Furthermore, the long lasting transformational effects of an experience that lasts for only a few minutes of cardiac arrest is a surprising and unexpected finding.

Sabom reported a young woman during brain surgery, for cerebral aneurysm, showing an EEG of cortex and brainstem totally flat. After the surgery, which was successful, the patient reported to have a very deep NDE, including an out of the body experience, with subsequently verified observations during the period of the flat EEG.

There are some induced experiences with electrical, chemical, experimental stimulation of temporal lobe, hippocampus etc. which also have unconsciousness, out of body experiences, perception of light, flashes of recollection from the past. These recollections, however consist of fragmented and random memories unlike the panoramic life-review that can occur in NDE. Transformational processes, with changing life-insight and disappearance of fear of death are not seen after such artificial means of induction of NDE. Thus, induced experiences are not the same as NDE. The question raised is, if brain is the seat of memory and consciousness, how can the clear consciousness outside one's body be experienced at the moment

that the brain has no function during a period of clinical death with flat EEG? In cardiac arrest also the EEG become flat. Blind people describe also have reported the veridical perception during out of body experiences. NDE pushes at the limits of medical ideas about the range of human consciousness and the midbrain relation. NDE could be a changing state of consciousness (the transcendence) or the BARDO, in which identity, cognition and emotion function independently from the unconscious body, but retain the possibility of non-sensory perception.

Epilogue

Look on yonder earth.
The golden harvest spring.
The unfoiling sheds light and life.
The fruits, flowers, the trees,
Arise in due succession.
All things speak peace, harmony and love.
The universe in nature's silent eloquence
Declares that all fulfil
The works of love and joy.
(Percy Bysshe Shelly)

To fulfil love and peace of all through music, we need a global perspective and the theme apart from clinical practice should have a developmental and educational as well as a community context. The music therapy methods (song writing, compositions, improvisations, song reminiscences, analysis) should be explored. Quantitative and qualitative research protocols drawn and mixed designs done to get data, and the data communicated through journals, seminars, awareness programmes. The professional issues like ethics of practice, professional supervision, competency of the educators, etc. are decided.

We have just seen how I wish to address these themes (developmental/education/clinical practice/research/music therapy methods and professional issues).

A child needs not only food, clothes, toys and a roof. It needs love, security, enjoyable communications with elders. Music and literature provide both. A literature rich and music rich home environment can take education beyond the school textbooks. It creates lifelong love for good, great books and music. Equip us to know how to think, not just to memorise and saves time by orderly planning of life/time. Build family bonds as memoirs which linger throughout life.

I had enjoyed my childhood in this way and I tried to recreate at least part of it for my son. Reading stories, singing and listening music together and talking about everything and analyzing them, playing games which ranged from scrabbles (vocabulary) to cricket, reciting great poetry, exploring encyclopaedias and knowledge books with wonder, conducting quiz for children in weekends, making a handwritten children magazine for the children of the locality through my son's initiative, thus encouraging

group interaction between children and encouraging them to keep these activity sheets. The time in between the homeworks and the tight schedules of study periods were made memorable by these.

This approach to home education is advocated due to three reasons.

1. Gives information in an enjoyable way and format to children. Think of the childhood books we read, music we heard, we will get valuable insight, practical information, exposure to various cultures, desire to acquire/or avoid/certain character qualities. A world of knowledge and experience is right at your fingertips.

2. Information in a form that is easy to remember or as a story is good for children and even for adults.

3. Interaction with kids and good significant informal informative and enjoyable conversations giving inter-and intrapersonal awareness and sharing.

Thinking and analyzing and enjoying music and literature together, critical, logical, aesthetic faculties are improved and we get a lifestyle which is healthy.

We always think of treating a patient, developing a child. But the system itself needs development, and sometimes treatment, especially so, in the case of the healthcare system. Healthcare system is a patient. Organisation of the healthcare system is as important as organization of our self activities or family activities, or patient activities. Every doctor should take care of it. Only then the healthcare system becomes healthy. Spend some time for improving it, in organizing thoughts on it. (Charlotte Hang, Ed in chief of J *of Norwegian Medical Association*. Medscape general medicine. 2005; 7(4):20@2005).

Music development model is spiral, says Swanwick and Tillman.(1986). Good music given in the first 15 years can produce the following effects.

0-4 years Mastery in sensory manipulation of materials.

4-9 Imitation of vernacular, personal, expressive characters from around.

10-15. Imaginative play of form (*rūpa*) speculative and idiomatic abilities.

15 and above. Metacognitive values of symbolic, systematic values.

Metacognition occurs in lucid states of music experience and in sleep which is awareness of one's own self, a deliberate direction of one's own thoughts done without our *jāgrad* control or knowledge. It has three processes in it.

1. Selfreflection (monitoring).
2. Intentionality (direction).
3. Self regulation (correction if any deviation).

The Spiral of Music development
(Br. J. Music Education Vol-3 PP-305-39. Swanwick & Tillman 1986)

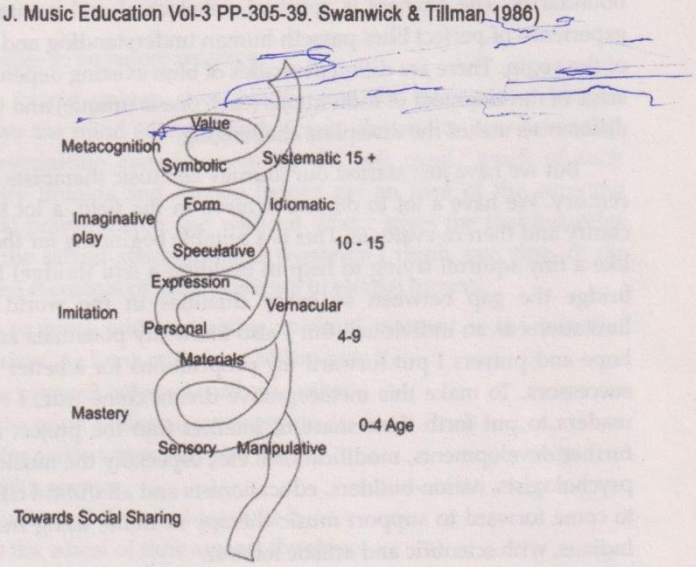

Fig. 1

Thought and action become spontaneously more effective when the knower, known and the knowing become one in Advaitic *Tanmayata*. This oneness of love is the message of music.

Advaitatanmayata.

Knower	Process of knowing	Known
Senses	Perceptions (hearing music)	Sensory world
Mind	Thoughts (listening starts with thoughts about music)	Relationships
Intellect	Analysis and synthesis of music as a sciene.	Rational, abstract knowledge
Feeling	Intuitions, dream visions/lucid visions of musical imagery. Music is touching the heart	Intuitive knowledge of natural laws

All these happen in music therapy for healing. The therapist should undergo the self healing process first. Then only he/she can help others.

Ultimately, music is touching the heart and is love personified and compassion at the highest spiritual level. Compassion to entire creation, to every human being irrespective of caste, creed, race, sex or language boundaries. The oneness is spiritual, intellectual and mental *Advaita*. The experience of perfect bliss passeth human understanding and is the *Nirvāṇa* of the yogin. There are different shades of bliss existing depending upon the stage of development of individuals (each one is unique) and this individual differences makes the discipline challenging.

But we have just started our journey as music therapists of the present century. We have a lot to do and achieve in the field, a lot to discuss and clarify and then re-evaluate. This is a humble beginning for the process. Just like a tiny squirrel trying to help in building a *setu* (bridge) I am trying to bridge the gap between so many dualities in the world. I know my limitations as an individual. But I also know my potentials and hence with hope and prayers I put forward my propositions for a better world for our successors. To make this metacognitive dream come true, I request all the readers to put forth their share of intellect into the project and think for further developments, modifications, etc., especially the musicians, doctors, psychologists, nation-builders, educationists and all dutiful citizens of India to come forward to support music therapy in India, using Indian *Rāga*, for Indians, with scientific and artistic fervour.

Every *Jīva* is a *rāga*, an improvised piece of music. A *Rāga* improvised to its full potential is a *Sampūrnarāga*. In it, *Apūrvarāga*, *Atyapūrvarāga* and *Asampūrnarāga* are also beautiful. But as D. Aldridge says the coherent fully developed improvised music maintains a beautiful form which exists in time. When this coherence is partially or completely lost, we become unhealthy. In the Druid mystery calendar the 72 possibilities of *Melakarta sampūrna rāga* (6 of them male and 66 females) will form a *rāslīla* combination like this.

Male	Female
1	+ 11
1	+ 11
1	+ 11
1	+ 11
1	+ 11
1	+ 11
6	+ 66 = 72.

The dance is not linear but cyclical, spiral and is the movement of 2 males (Kṛṣṇa, Balarāma) with 22 females in 3 circles. A demented or mentally retarded person may not need a complex *apūrvarāga*. But a musician, an intellectual, an artist, a genius may need it. Since our clients have a range (being humans) we have to understand this and develop ourselves first.

We have miles to go before we sleep.

When the bright golden stars plunge into the dark sea of sky, in mysterious ways the mind soars to lively lovely dreams in the vast sacred spacetime of everlasting consciousness. In the soft magic touch of such nights, creativity unfolds and human beings get an idea of the supreme order of natural power within and without. Music gives me that beautiful experience of the sacred spacetime and whatever I think, say, sing, or do come from those moments of lucid existence in eternal present.

The tryst or truce with a creative spiritual moment is the peaceful *Nirvāṇa* of *nādalaya*. As Edna st Vincent Millay puts it,

Truce for a moment between earth and ether
Slackens the mind's allegiance to despair.
Shyly confer earth, water, fire, and air
With the fifth essence.
For the duration, if the mind requires it,
Trigged is the wheel of time against the slope;
Infinite space lies curved within the scope
Of the hand's cradle.
Thus between day and evening in the *autumn*
High in the west alone and burning bright
Venus has hung, the earliest riding light
In the calm harbour.

In the beautiful twilight of my life, in my hand's cradle lies curved the spacetime and its *sudarśana* wheel like Kṛṣṇa in Yeśoda's lap. And its musical *Pañcajanya* and flute reverberates my whole being.

Dr. Suvarna Nalapat

Dr Suvarna Nalapat

Index

Music Therapy in Management, Education & Administration

This book deals with the application of music therapy in management, education and administration. Explaining how the Raga is used to remove ragadvesha (dualities), it deals with the multiple intelligence theory of Howard Gardner to develop the music therapy scheme.

It also presents a detailed account of medical ethics, how to organize a research process, the concept of a medical university, curriculum for music therapy, curriculum for short-term courses, role of emotions in music therapy, and the problem of consciousness. Case studies of dementia and alzheimer's disease find place in the discussion as well.

Dr. Suvarna Nalapat, an MD in pathology, has a vast experience of 32 years of teaching undergraduate and postgraduate classes. She was Professor and Head of Department of Pathology at Amrita Institute of Medical Sciences and Research Centre, Kochi; Consultant Histopathologist at Endocrinology and Immunology Laboratory, Kochi; and Associate Professor of Pathology at Kerala Government Medical College, Calicut.

Besides a large number of research papers published in national and international journals of repute, Dr. Nalapat has to her credit many acclaimed books including Amrita Jyoti: Comparative Study of Religions, A Rediscovery of India through the panchasidhantika of Varahamihira, Mudra: A Literary Criticism of Ujjainy. Also, she has participated in many a seminars and conferences and delivered lectures on Music therapy.

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